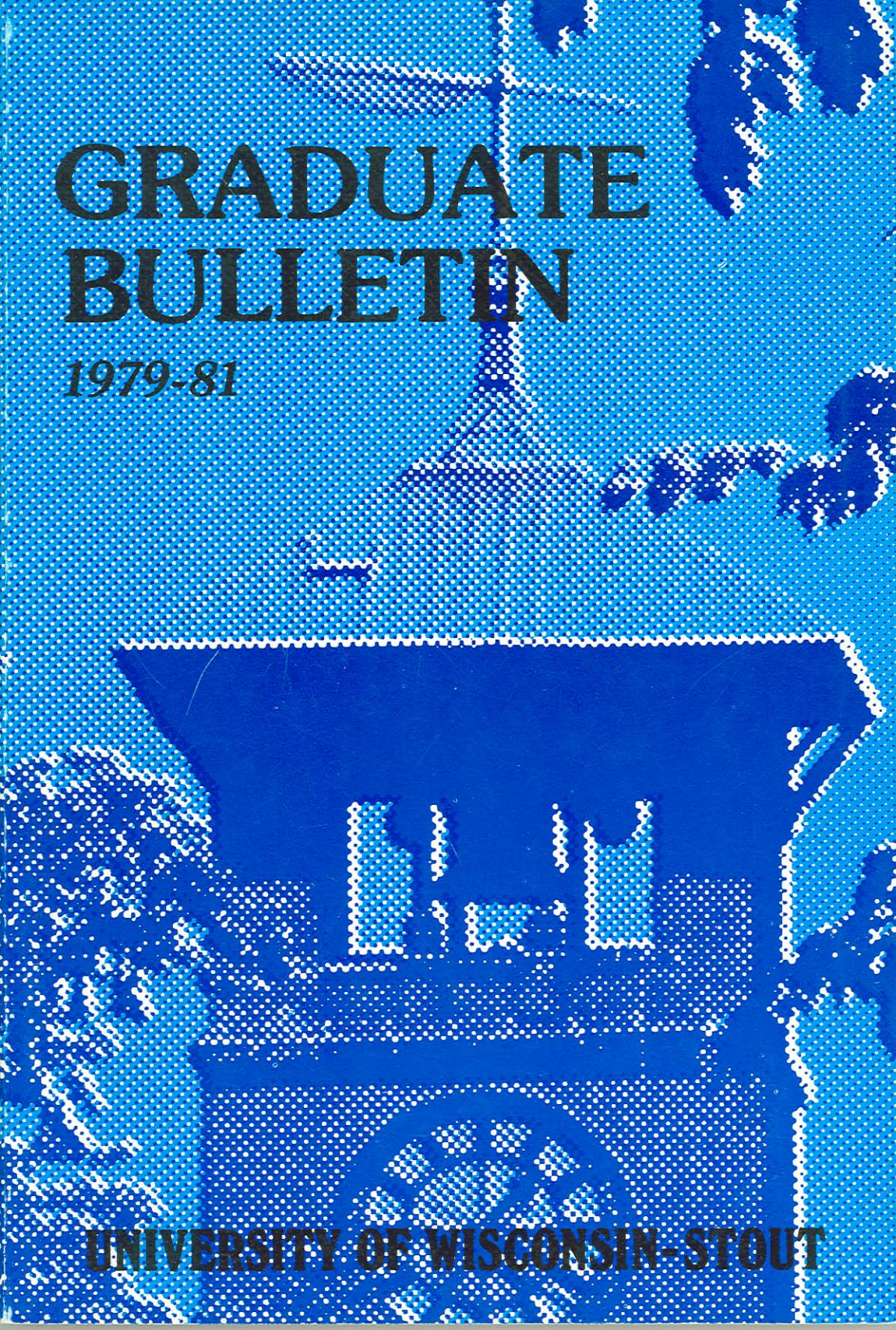
GRADUATE BULLETIN

1979-81



UNIVERSITY OF WISCONSIN-STOUT

STUDENT PROGRESS SHEET

EVENT/ REQUIREMENT	WHEN NORMALLY COMPLETED	MATERIALS OBTAINABLE FROM	DATE COMPLETED
Application for Admission	At least 30 days prior to first term you plan to take graduate course. Once admitted, you need make no further application unless you wish to change majors.	Form available in Graduate College office.	
Official Transcripts Sent to Graduate College, UW-Stout	At time application for admission is made to the Graduate College.	Request all colleges attended (except Stout) to send official transcripts of work completed.	
Notification of Admission	Within two weeks after all needed materials are received by the Graduate College office.	Letter of admission to a degree program will be sent from the Graduate College office.	
Program Plan	**Tentative** program plan at first term of enrollment; **final** plan required with application for degree candidacy.	Form available from graduate advisor or Graduate College office.	
Register for Classes Each Term	Pre-register as announced by registrar each term **or** on first day of session according to directions.	Obtain Permit to Register and program cards from Graduate College before seeing registrar.	
Begin Research, Plan A or B	May be started during **Research Foundations** (421-740), see advisor for details.	Packet of instructions and forms for Plan A & B available in Graduate College office.	
Apply for Degree Candidacy	After completing eight credits of graduate work at Stout. May not enroll for final six credits until admitted to candidacy.	Form available in Graduate College office.	
Transfer of Graduate Credits From Another University	As soon as credits are completed. Actual transfer is made at time of approval of degree candidacy.	Form available in Graduate College office. (Must also have official transcript sent from school where work done.)	
File Intent to Graduate	By end of second week of term in which you expect to complete your degree.	Form available in Graduate College office.	
Obtain Instructions for Graduation	Near end of term in which you plan to graduate.	Will be sent to all who file an "intent to graduate" during a given term.	
Submit one copy of Research Paper and Abstract to Graduate College office	By end of term in which you expect to graduate. This is just like any other course requirement; until it is in, you will not have completed your degree requirements.	Instructions for typing and reproduction available in Graduate College office. (Plan A & B instructions)	
Submit photograph of Self to Graduate College Office (Optional event)	Any time during enrollment, preferably early in your enrollment. (Not a requirement.)	Any recognizable photo will do; it is only for use in remembering you in future correspondence.	
Supply Information For Placement Credentials	During last term of enrollment.	Information available from Placement office.	
Receive Diploma and Transcripts	After all records are clear and degree requirements met.	You will receive your diploma and a transcript from the registrar.	

Graduate College

Bulletin
1979-1981

University of Wisconsin-Stout

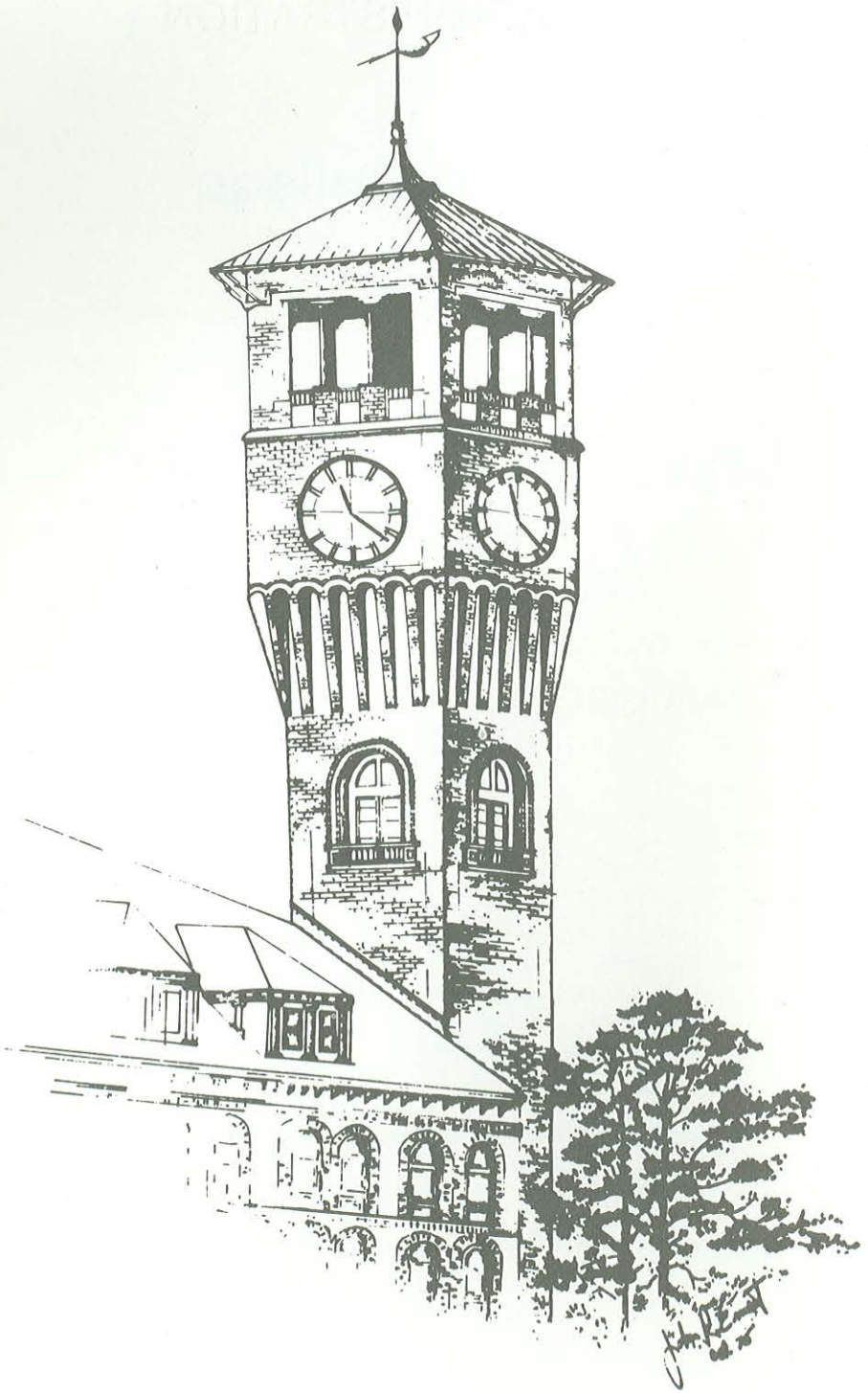
Menomonie, Wisconsin 54751

AN EQUAL OPPORTUNITY UNIVERSITY

Volume 62

While this bulletin was prepared according to the best information available as of July, 1978, all information as to fees, admission, graduation requirements and course offerings is subject to change.

Graduate College: Phone: 715/232-2211



GRADUATE ADMINISTRATION

Robert S. Swanson ..... Chancellor
University of Wisconsin-Stout, B.S., M.S.; University of Minnesota, Ph.D.

Wesley L. Face ..... Vice Chancellor
Northern State College, B.S.; University of Wisconsin-Stout, M.S.; University of Illinois, Ed.D.

Nelva G. Runnalls ..... Dean, Curriculum Research and Graduate Studies
Kearny State College, B.S. Ed.; Mankato State College, M.S.; University of Missouri, Ph.D.

Lawrence S. Wright ..... Assistant Dean, Graduate Studies and Curriculum
University of Wisconsin-Stout, B.S., M.S.; University of Missouri, Ed.D.

Program Directors—Master's Degrees

Guidance and Counseling ..... David R. Cook
Boston University, B.S.; Indiana University, M.S., Ed.D.

Home Economics—
Clothing, Textiles and Related Art ..... Beverly Schmalzried
Fort Hays Kansas State College, B.S.; Kansas State University, M.S.; Florida State University, Ph.D.; Nancy M. Bean, Acting, 1978-79, Utah State University, B.S.; Michigan State University, M.E.; University of Missouri, Ph.D.

Home Economics—
Food Science and Nutrition .....

Home Economics Education ..... Beverly Schmalzried
Fort Hays Kansas State College, B.S.; Kansas State University, M.S.; Florida State University, Ph.D.; Nancy M. Bean, Acting, 1978-79, Utah State University, B.S.; Michigan State University, M.E.; University of Missouri, Ph.D.

Industrial Education ..... Lawrence S. Wright
University of Wisconsin-Stout, B.S., M.S.; University of Missouri, Ed.D.

Management Technology .....

Marriage and Family Counseling ..... Charles P. Barnard

University of Wisconsin-Superior, B.S., M.Ed.; University of Wyoming, Ed.D.

Media Technology ..... James R. Daines
University of Wisconsin-Stout, B.S., M.S.; University of Missouri, Ed.D.

Professional Development ..... Beverly Schmalzried
Fort Hays Kansas State College, B.S.; Kansas State University, M.S.; Florida State University, Ph.D.; Orville W. Nelson, Acting, 1978-79, University of Wisconsin-Stout, B.S.; University of Minnesota, M.S., Ph.D.

Safety ..... Charles Edwin Smith
University of Wisconsin-River Falls, B.S.; Northern Illinois University, M.S.; Michigan State University, Ph.D.

School Psychology ..... David R. Cook
Boston University, B.S.; Indiana University, M.S., Ed.D.

Vocational Education ..... Harold Halfin
Fairmont State College, A.B.; University of Wisconsin-Stout, M.S.; West Virginia University, Ed.D.

Vocational Rehabilitation ..... Paul Hoffman
University of Maine, B.S.; University of Arizona, Ed.D.

Program Directors—Ed. S. Degrees

Guidance and Counseling ..... David R. Cook
Boston University, B.S.; Indiana University, M.S., Ed.D.

Industrial and Vocational Education ..... Harold Halfin
Fairmont State College, A.B.; University of Wisconsin-Stout, M.S.; West Virginia University, Ed.D.

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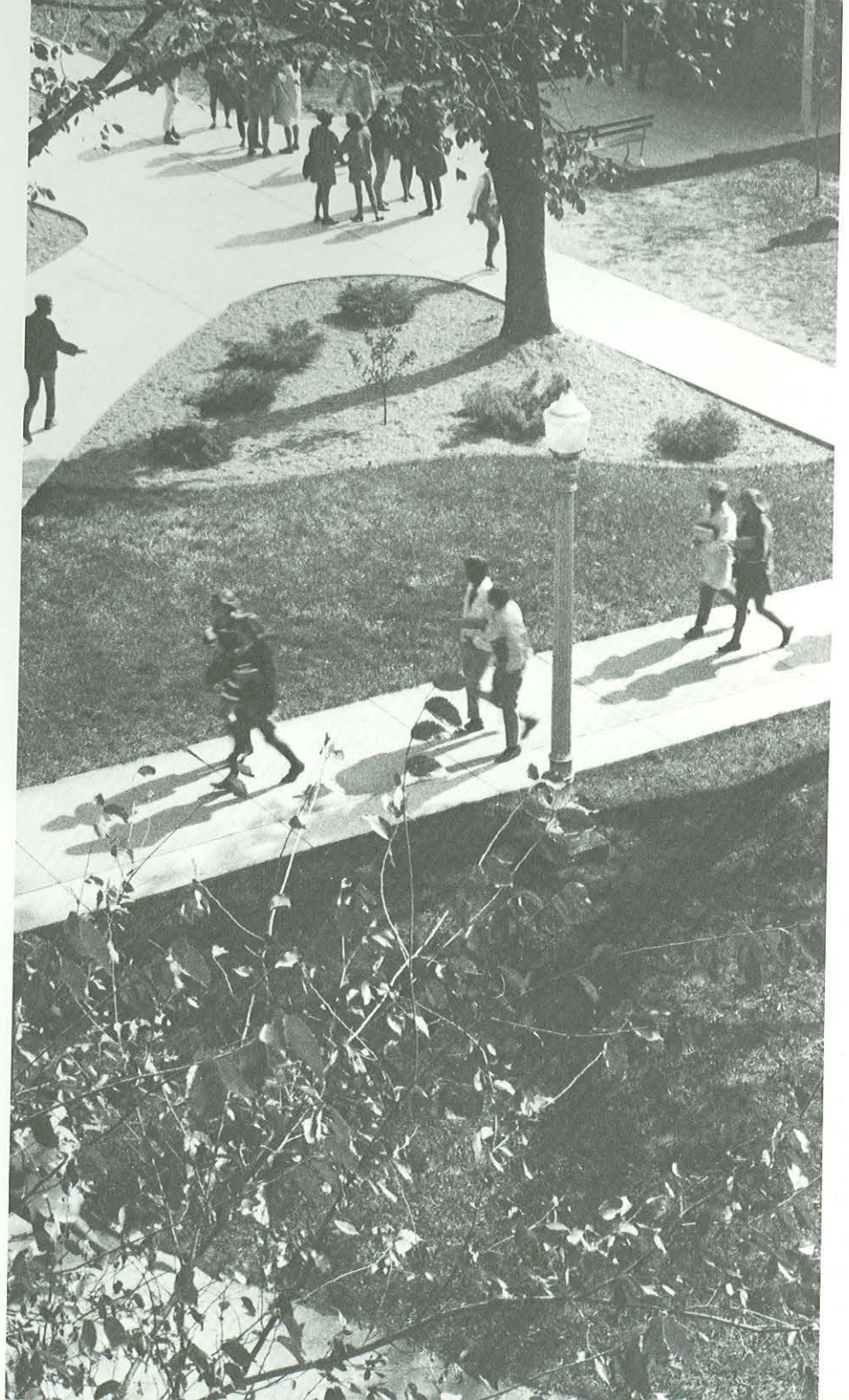


GENERAL INFORMATION

A NOTE TO THE READER:

If you are examining this bulletin for the first time, it is likely that you are in the process of making one of your most important choices. That choice is to invest more of your lifetime, and a considerable amount of your resources, for improving your own capabilities. You may be considering joining a small group within our society who have demanded more of themselves, so that they can make a greater contribution. Choosing the graduate school which will guide your growth process is a critical decision. It may well affect the direction of the rest of your life, as well as the progress of your career. I encourage you to examine this bulletin carefully and to consider whether the purposes, philosophy and growth environment at the University of Wisconsin-Stout are the best choice for you. Graduate education has been part of Stout since 1935. We have maintained our original thrust in Industrial and Vocational Education and added programs of high societal need which are related to the University's mission. To date, fifteen graduate degree programs have evolved through a rigorous selection process. Master's degrees are offered in thirteen programs and Education Specialist degrees in two. Because graduate programs offered are all in the University's major thrust areas, each program has a strong basis of faculty expertise. If you find that your needs coincide with the nature of programs and offerings at Stout, please contact the director of the program in which you are interested, or write directly to the Graduate College for more information.

Nelva G. Runnalls, Dean

THE UNIVERSITY

Stout is one of 13 publicly supported universities in the University of Wisconsin System. It was founded as a private institution in 1893 by James H. Stout. A Menomonie industrialist and a man of great vision, he saw that students in America's developing industrial society needed a different kind of education, an education broader than that offered by the traditional curriculum. Since its founding, Stout has gained a position of national leadership in industrial, vocational and home economics education. Its programs in those fields are among the largest in the world. From this beginning, strong programs in the areas of man's relation to technology, vocation and society have been established. Although Stout is a career oriented university, its leaders have had the foresight to make the humanities and social sciences key parts of the total educational program.

MISSION

Stout makes a unique contribution to the University of Wisconsin System by concentrating its efforts in those higher education programs directly related to industry and technology, home economics, business, the helping professions and applied arts. Concentration within these selected areas enables the University to develop and offer highly specialized instruction in great depth. Recognizing the interdependence of knowledge in all areas and the need to humanize, individualize and personalize all aspects of student life, the University seeks to complement its specialized education with broader learning experiences and opportunities essential for personal, professional, esthetic and social effectiveness.

THE FACULTY

Because Stout has specialized in certain areas, a staff comprised of individuals nationally recognized in their fields has been developed. All classes are taught by highly qualified professionals. Of the 334 members of the instructional faculty, 35 percent hold earned doctorate degrees, while others hold special degrees in their fields. One of the fine traditions at Stout has been the faculty's commitment to provide extra help to students.

LEARNING RESOURCES

Learning Resources provides services to assist instructional communications and the learning process. This service is divided into three functional units: Pierce Library has an integrated audio-visual and print resource collection consisting of 165,000 volumes, more than 2,225 periodicals, 3,000 audio/video tapes, films and slides. An interspersed stack/seating arrangement of 900 user stations is featured.

The library contains specialized collections of national prominence in all fields of graduate offerings. A complete collection of ERIC (Educational Resource Information Center) documents on microfiche is held. On-line computerized literature searches for ERIC, AIM/ARM is offered free of charge to students and faculty. The library is open 94 hours per week.

Instructional Technology Services are housed in the Communications Center. Professional media specialists provide faculty and students with media design, utilization, and production consultation and services. Services include still and motion picture photography, graphics, instructional and broadcast color television, audio, media equipment maintenance, and a self-instruction lab. The self-instruction lab provides students with facilities and equipment for learning media equipment operations and for producing some audio-visual materials.

The Academic Computer Operation provides computer support for graduate student and faculty research. Services provided include consulting, programming assistance, data preparation for statistical analysis, and optical scanning of mark-sense forms. A timesharing computer is available for on-line teleprocessing computation, with terminals located in classroom buildings and the library. All services are provided free for graduate student unfunded research.

FACILITIES

Modern and well-equipped facilities mark Stout's 102-acre campus. In recent years, 14 major facilities have been constructed around the perimeter of the central campus core. A total of 33 labs encompassing 123,900 square feet for technical work in electronics, power, wood, metals, graphic arts, industrial graphics and plastics are available for industrial and vocational education majors.

A Counseling Center with video-tape equipment is used in guidance and school psychology in conjunction with a materials center. A Home Economics building, opened in 1973 and constructed at a cost of $4 million, offers advanced research and laboratory facilities in the fields of textile and fashion design, fashion merchandising, food science and nutrition, child development, family life, hospitality and tourism, and consumer education.

Research and educational improvement activities coordinated by the Center for Research and Educational Improvement include selected areas related to business and industry, human development, education, and home economics. Consultation on research design is offered through the Center for Research and Educational Improvement. Research activities at the university are encouraged, and are coordinated by the Center for the total campus.

Incorporated within the Center for Research and Educational Improvement is the Center for Vocational, Technical and Adult Education, approved jointly by the University and the State Board for Vocational, Technical and Adult Education. Its primary field of activity is research and curriculum development in vocational/technical education.

The Department of Rehabilitation and Manpower Services conducts research, development and practicum experience in work evaluation.

The Academic Computer Center provides consulting services and programming assistance for statistical analysis and data processing. Services available

include optical scanning and keypunching. A PDP-11/40 timesharing system with access from numerous campus terminals was made available in November of 1973. The Administrative Computing Center serves the administrative needs of the graduate students and faculty. An IBM System 3 Model 10 is used to provide service to both batch and online users.

THE GRADUATE COLLEGE

Accreditation: The graduate program at Stout is fully accredited by the North Central Association of Colleges and Secondary Schools (NCA) and the National Council for the Accreditation of Teacher Education (NCATE) to offer work at the master's (fifth year) and Education Specialist (sixth year) levels. The Marriage and Family Counseling program is accredited by the American Association of Marriage and Family Therapists.

Institutional Memberships: The University of Wisconsin-Stout holds membership in the Midwest Association of Graduate Schools and the Council of Graduate Schools in the United States.

Organization: Stout's academic organization includes four schools and a graduate college.

The Graduate College is organized to serve students who desire to earn graduate degrees or extend their education at the graduate level. It is a distinct administrative unit which offers programs which are served by the course offerings of the Schools of Industry and Technology, Home Economics, Education and Liberal Studies.

The Graduate College consists of the administration, a graduate council, a director and committee for each degree program and a graduate faculty drawn from the several schools. Each program is organized and operated by a program director and a program committee. Courses are taught by the graduate faculty through the departments of the four schools. Also housed within the Graduate College is the Center for Research and Educational Improvement, which is responsible for encouraging, promoting, coordinating and monitoring research at the University.

Functions: Stout serves three broad functions: instruction, service and research. As a part of the University, the Graduate College contributes to each function.

INSTRUCTION: The Graduate College offers programs for the preparation of professional personnel in the areas of media technology, guidance and counseling, clothing and textiles, food science and nutrition, home economics education, industrial education, management technology, marriage and family counseling, safety, vocational education, vocational rehabilitation, school psychology, and professional development in education. Common to all programs is the development of competencies in applied research. Continuing education beyond the bachelor's level for other than degree purposes is also a part of the college function.

SERVICE: The service function involves consultation to education, business, and industry in the areas of the graduate degree programs. Included also are such activities as sponsored workshops, publications, surveys and research,

and participation as committee members and officers in appropriate local, state and national organizations.

RESEARCH: Research and scholarship by the faculty and staff are encouraged to constantly add to the bodies of knowledge on which degree programs are based. Studies of teacher education problems, technological developments, curriculum development procedures, field surveys, and experimental projects are reported in professional literature and to professional organizations. Consultation on research design is offered. Through the Center for Research and Educational Improvement, research activities of the University are encouraged and coordinated.

ADMISSION PROCEDURES

Students seeking graduate credit (either for degree or non-degree programs) should apply for permission to enroll at the Graduate Office. For students who seek admission to a graduate program (those seeking degrees or certification at Stout) the procedure is as follows:

1. **Apply for admission,** using the Application for Admission GC 111 included in this bulletin. Application should be made 30 days in advance of registration.
2. **Request transcripts** of all previous college work be forwarded to the Dean of the Graduate College by the registrar of college(s) where the work was completed.
3. **Supply supportive statements** of qualifications for graduate study as required by specific programs. See program outlines.
4. **Students from countries** where English is not the primary language must submit a TOEFL score.
5. **State of Wisconsin regulations** require submission of a $20.00 non-refundable admission evaluation fee by all candidates for admission to the Graduate College. Please attach a check or money order, made out to UW-Stout, in the amount of $20.00 to the admissions application.

For non-program students seeking only permission to enroll for graduate courses, the procedure is as follows:

1. Complete only the indicated part of GC 111 (included in this bulletin).
2. Submit Registrar's Form (GC 114) available from the Graduate College, certifying that the student has earned a bachelor's degree from an accredited college or university.
3. Students from non-English speaking countries must submit a TOEFL score.

Guest matriculants (those students enrolled in graduate programs at other colleges who wish to earn graduate credit for transfer to those programs) should submit a Guest Matriculant form (GC 113) available from the Graduate office.

ADMISSION STATUS FOR PROGRAM STUDENTS

Each applicant admitted to a requested program is granted status in the Graduate College as follows:

FULL STATUS is granted an applicant for a master's degree program who has an undergraduate grade point average of at least 2.75 (based on a four-point scale) and has the required pattern of background preparation. Note: An applicant with a grade point average of at least 2.90 for the last two years of bachelor's degree work will be granted full status even though the four-year record is below 2.75. Applicants for an Ed.S. program must have earned a master's degree grade point average of 3.25 to be granted full status.

PROBATIONAL STATUS is granted a master's degree applicant having an undergraduate grade point average of less than 2.75, but not less than 2.25. An Ed.S. degree applicant with a master's degree grade point average of less than 3.25 may be admitted on probational status.

PROVISIONAL STATUS may be granted a program applicant having a qualifying grade point average but who does not have the pattern of background preparation required by the requested program. Such a student will be required to make up undergraduate deficiences and/or take additional graduate course work to earn the degree.

TRIAL STATUS may be granted a master's degree applicant having less than a 2.25 grade point average in undergraduate work if records of work experience or other supplemental information are judged by the Graduate College to justify such admission. Such a student must take a block of course work prescribed by the program director in which an average of "B" or better must be earned to gain admission to the program on probation. Work earned on trial status will normally be in addition to the usual degree requirements.

SPLIT PROGRAM STATUS may be granted an applicant who is in the last term of undergraduate work, needing less than a full load to earn the bachelor's degree. Such a student is limited to a total of 16 credits per semester. Under mitigating circumstances, a split program student may be admitted on probational or provisional, but never on trial status. Split program students are eligible only as program students.

NOTIFICATION: Each applicant will be informed generally within 30 days of receipt of all needed materials as to acceptance or rejection. Program students will, if accepted, be informed as to the status granted. (Non-program students permitted to enroll for graduate courses without admission are not given any status designation.) Those applicants denied admission will be so informed. Generally, denial will be due to one or a combination of the following:

1. Too low previous scholastic record.
2. Lack of, adequate evidence of, or insufficient background preparation and/or experience.
3. Failure to submit requested materials and/or submission of fraudulent records.

DEGREE PROGRESS

Procedures are developed to facilitate orderly progress toward the degree. Each student is assigned an advisor who aids in making plans, but initiation of each step is the responsibility of the student. A chart summarizing various details is in the front of this bulletin for reference.

Admission: Admission to a degree program is based on two types of criteria: (1) academic promise, as shown by scholastic success in previous accredited college work, scores on standardized tests, personal interviews with the student, statements from individuals who have knowledge of the student's ability. (2) appropriateness of background for advanced study in the area as shown by the pattern of course work completed previously and statements certifying practical experience. Once the student has been admitted to the program, it is the University's intention to provide aid in progressing toward the degree, while at the same time evaluating the students' progress. In certain cases, progress checks may show that it is desirable for the student to modify the plan or discontinue his or her program.

Program Plan: Requirements for each program are outlined in this bulletin; the student should study them and plan a schedule accordingly. At the first enrollment, each student will make a program plan sheet with the advisor; this may be revised subsequently but should serve as a guide to each enrollment.

Examinations: A qualifying examination, generally prior to or as a part of degree candidacy, may be required in specific degree programs.

Registration for Classes: Ordinarily, there is a preregistration for each term approximately six weeks in advance. A day or two at the beginning of each term is also set aside for registration. The student should carefully check the proposed program against the program plan; the advisor's signature is required for each registration.

Periodic Evaluation of Scholastic Standing: At the conclusion of each term, an evaluation of scholastic status will be made according to the following schedule:

Scholastic Status at Beginning of Term	*G.P.A. for Term*	*Cumulative G.P.A.*	*New Scholastic Status**
Full	3.00-4.00	3.00-4.00	Full
	0-2.99	3.00-4.00	Full
	0-2.99	0-2.99	Probation
Probation	3.00-4.00	3.00-4.00	Full
	3.00-4.00	0-2.99	Probation (cont.)
	0-2.99	0-2.99	Drop**

*New status will generally be assigned only when at least six credits have been completed beyond total on which previous status was based.

**Specific reaction from program directors required.

Periodic Review of Professional Promise: Because scholastic achievement is only one factor in professional success, the program director may arrange for the staff who have had appropriate contact with the student periodically, to review his or her professional promise. Especially in cases where such professional promise is questioned, the program director and appropriate faculty will discuss an improvement program with the student. Certification for degree candidacy and graduation may involve evaluation of this kind in addition to scholastic attainment.

Degree Candidacy: Degree candidacy is a means of defining the student's total degree plan and evaluating progress toward that goal. Full-time students will apply for degree candidacy by the end of their first term of enrollment. Part-time students will apply when eight credits of graduate work at Stout have been completed. Candidacy application forms and specific directions are available in the Graduate College office. Candidacy is applied for by the student, recommended by the program director, and awarded by the Graduate College.

Research Project: Each degree program requires some kind of research or creative intellectual inquiry. The student should confer with his or her advisor early in the program to allow ample time and preparation for completion of an appropriate project.

Transfer of Credits: A student planning to transfer graduate credits from another institution to a program here should check with his or her advisor in advance concerning applicability of the proposed work. A form to request transfer is available in the Graduate office. Transfer of credits is made only after admission to degree candidacy.

Intent to Graduate: Students are awarded degrees at the end of the first and second semesters and the summer session. Students planning to finish degree requirements within a given term should file an "Intent to Graduate" form available in the Graduate office.

Graduation Ceremonies: A graduation ceremony is held at the end of each semester and the summer session. Instructions for graduation will be sent to all persons who have filed a statement of "Intent to Graduate."

Award of the Degree: After all grades and credits have been recorded (usually about two weeks after the end of each semester or summer session), the student's transcript will be checked to determine that program requirements have been met with an overall grade point average of at least "B" (3.0). The student will be mailed the diploma and a complete transcript certifying his or her degree. Students needing such certification for salary purposes prior to the official statement may request a letter from the dean of the Graduate College.

ACADEMIC INFORMATION

Academic Calendar Year: The University's academic year is divided into two semesters. Each semester is also divided into two nine-week quarters. The student should recognize that the Stout designation of a quarter represents only one-half a semester and should not be confused with the quarter system in many universities which is 12 weeks in length. Courses scheduled on the quarter basis at Stout meet twice as often each week as courses scheduled on the semester basis for the same credit. Credit hours are awarded on a semester credit hour basis for courses scheduled on either basis.

The Summer Session: Each year, Stout offers a summer session approximately 10 weeks in length. The regular eight-week summer session begins about two weeks after the close of the regular academic year. Stout is also offering courses within and before the regular eight-week session of varying lengths of time so that a combination of one, two, three or five week courses can be taken.

Credits may be earned at the rate of one semester hour per week of attendance. This makes it possible to earn as many as 10 credits during a summer if attendance is for the entire 10-week summer session. Because of the large number of graduate students in attendance during the summer, practically all graduate level courses are offered each summer. The Summer Session Bulletin is published each April. It contains complete information about offerings, class schedules, enrollment procedures, degree programs, and housing. A copy will be sent on request.

Grading System: The Graduate College uses a seven step grading plan.

Grade	*Grade Point Value*	*Description*
A	4.0	Exceptional achievement at the graduate level
B+	3.5	Above average graduate level work
B	3.0	Average graduate level work
B–	2.5	Below average graduate level work
C	2.0	Acceptable but less than expected graduate level work
D	1.0	Questionable graduate level work
F	0.0	Failure

An "incomplete" may be given for failure to complete course work due to absence over which the student has no control. Incompletes not cleared within a year after the course would normally have been completed will be changed to "W" (withdrawn); to receive credit after that time, students must re-enroll for the course.

The grade "IP" (In Progress) may be given for research papers, theses, independent study and field experience. This grade indicates that the student has been in regular attendance but that additional time is required to complete course requirements. If the "IP" is not removed within two years, the course must be re-registered for to remove the "IP".

Textbooks: Graduate students must supply their own textbooks. These may be purchased in the book store located in the Memorial Student Center or elsewhere as chosen by the student.

GENERAL POLICIES

The following policies apply to all graduate programs at Stout (with a few exceptions noted):

Number of Credits Required: A master's degree program will require at least 30 semester credits. An Education Specialist program will require at least 36 semester credits beyond credits completed in the master's degree.

Credits Required in Courses Open Only to Graduate Students: All master's degree programs will require at least 15 credits in course work open only to graduate students; Education Specialist programs require at least 18 credits in this level of course work. In the University of Wisconsin System, such courses carry numbers between 700 and 899.

Residence (On-Campus) Course Work: A program student must earn credits through on-campus attendance for at least one semester (12 credit minimum) or two consecutive summer sessions (six credit minimum in each). A master's degree program must include at least 15 credits specified as Stout on-campus course work; an Education Specialist program must include 18 credits of this kind of work. Stout's extension courses are not considered residence work.

Time Limits: All credits toward a degree, including transfer credits, must be completed within the seven years prior to the awarding of the degree.

Optimum Credit Load: Graduate students may take a maximum of 16 credits a semester. Students with half-time assistantships are limited to a maximum of 11 credits a semester; quarter-time assistants are limited to a maximum of 14 credits a semester. During the summer session, the maximum credit load is an average of one semester credit a week.

Graduate students enrolled at Stout who plan a concurrent enrollment at another institution of higher education are required to inform the Graduate College in advance. In such enrollments, the total credit load is subject to the limitations described above.

Transfer Credits: In general, a maximum of nine credits may be transferred from any accredited graduate school. In appropriate cases, as many as 15 credits may be transferred if earned from one of the institutions in the University of Wisconsin System. Such credit by transfer, to count toward a degree, must be judged by the program director to be appropriate as a required or elective course. Students who have been admitted to a program should get approval of the program director prior to taking such work. Any courses to be transferred must be clearly identified as having been taken for graduate credit. Transfer work may be earned either through on-campus or through extension attendance.

Continuing Education: Graduate course work beyond the required 15 Stout residence credits may be earned through Stout's Continuing Education program. That office offers a wide range of work, including graduate only (700-899 level) and other appropriate work awarded graduate credit. The student should consult the program director relative to appropriateness of such work for meeting the requirements of the program. Graduate course work taken through the Continuing Education program will be considered as transfer credit.

Correspondence Work: No credit toward a graduate degree will be allowed for correspondence work.

Evaluation for Retention: One measure of retention is earning a grade point average of at least 3.0 for the master's and 3.25 for the Ed.S. degree on all work needed to fulfill the degree requirements. Another measure of retention is through evaluation by the program director of the student's demonstrated potential for success in the field. In cases in which a student is recommended to be dropped, he or she shall have opportunity to be heard before such action is taken.

Petitions: In cases where exception to these policies or other regulations seems justified, a student may petition. Petitions for such exceptions are subject to the approval of the Dean of the Graduate College.

RESIDENT STATUS OF GRADUATE STUDENTS

Adult students who have been bona fide residents of Wisconsin for twelve months immediately proceding enrollment in the university are considered to be resident students for tuition purposes.

(In determining bona fide residence, **intent** to establish and maintain a permanent home in Wisconsin is determinative. The burden of proof is on the student but intent may be demonstrated or disproved by factors including, but not limited to, filing of Wisconsin income tax returns, possession of a Wisconsin operator's license, place of employment, and self-support.)

The following categories of students are also considered to be residents for tuition purposes:

Non-resident members of the armed forces and persons engaged in alternative service who are stationed in this state for purposes other than education and their spouses and minor children during the period such persons are stationed in this state.

Any student who is a graduate of a Wisconsin high school and whose parents are bona fide residents of this state for 12 months preceding the beginning of any semester or session for which the student registers at the university or whose last surviving parent was a bona fide resident of the state for 12 months preceding death. Note that this applies to both minor and adult students.

Non-resident part-time students who are fully employed (housewives are considered to be fully employed) in Wisconsin will be charged a resident per credit fee if they are enrolled for no more than one course not to exceed five credits for an academic term. Written verification of employment is required.

FEES

Graduate fees are set by the University of Wisconsin Board of Regents and are subject to change. Resident fees refer to students who are residents of Wisconsin and to Minnesota residents who have been approved for payment of resident fees through the Minnesota-Wisconsin Reciprocity Agreement described below. Fees for graduate students registered for nine or more credits are:

Resident: $438.00 per semester
Non-resident: $1,315.00 per semester

Part-time graduate students are those carrying eight and one-half (8+) credits or less in the regular session.

Split program students (eligible undergraduates carrying graduate work simultaneously) pay the applicable undergraduate fee. Any expense incurred by the graduate during the conduct of research problems—such as the printing of questionnaires and maps, typing, thesis binding, etc.—is the responsibility of the student.

Refunds: Semester Basis
100% for the first week
80% second week
60% third week
40% fourth week
0% fifth week

In determining withdrawal date, the University uses the date the student notifies the school of the withdrawal; or if the student fails to notify the school and is otherwise unable to verify date of withdrawal, the date of the request to refund will be used to determine the refund.

Students who enter military service by enlistment, or otherwise, shall receive either a full refund of fees or receive course credits for the term. Other exceptions to the above may be made upon approval of the Chancellor and the designated Board of Regents representative.

Minnesota-Wisconsin Tuition Reciprocity Agreement: An agreement between the states of Wisconsin and Minnesota permits residents of either state to attend higher education institutions in the other state at the resident tuition rate for that state and institution.

To be eligible under this agreement, a student must file an application prior to or during the term or semester in which he/she expects to first receive the waiver of the non-resident portion of tuition. A student is deemed to meet this application date requirement if his/her completed application is postmarked no later than the last day of scheduled classes. A term or semester is deemed to run through the last day of scheduled classes as published in the academic calendar of the institution. Neither the Minnesota Higher Education Coordinating Commission nor the University will be financially liable for students enrolled under the reciprocity agreement who have not received prior approval and certification by the Minnesota Higher Education Coordinating Commission.

Students certified for the academic year are also covered for the summer session. A new application must be filed each year.

FINANCIAL AIDS

Several kinds of financial aids are available to graduate students who meet all entrance requirements. Some of these aids provide an opportunity for desirable professional experience as well. Application for assistantships should be filed with the Dean of the Graduate College by March 15, preceding the academic year of planned attendance. Conditions for assistantships and other aids are subject to change. Aid received through the Financial Aids office are based on need. All awards will be adjusted so as not to exceed the determined need.

Graduate Non-teaching Assistantships: The half-time graduate assistantship requires 20 hours of professional service per week in an area related to the student's program. The student may not accept other employment during this period. A stipend of $3,488 for master's and for Ed.S. candidates per academic year is provided. The nonresident graduate assistant, in addition, pays only the resident incidental fee, the nonresident portion being waived. The student's

scholastic load is limited to a maximum of 11 credits per semester. This ordinarily requires attendance during the summer session preceding and/or following the regular year of such service to earn the degree. Though no stipend is provided for the Summer Session following his or her assistantship, the student is exempt from nonresident tuition.

The quarter-time graduate assistantship requires 10 hours of professional service per week in an area related to the student's program. A stipend of $1,744 for master's and for Ed.S. candidates per academic year is provided. The quarter-time graduate assistant pays all fees. The student's scholastic load is limited to a maximum of 14 credits per semester.

Teaching Assistantships: The teaching assistant teaches a laboratory or discussion session, generally about 10 contact hours per week. A stipend of $3,488 per academic year is provided. The nonresident assistant, in addition, teaching pays only the resident incidental fee, the nonresident portion being waived. The student's scholastic load is restricted to 11 credits per semester. This ordinarily requires attendance for a summer session preceding and/or following the regular year of such service to earn the degree.

Residence Hall Positions: Opportunities are available to graduate students to serve as a resident advisor on a floor community or as an assistant head resident of a hall. Resident Advisors receive remuneration in the form of room and board. The assistant head resident position is a salaried one. Application for both positions should be made to the Housing office in the basement of North Hall.

Vocational Rehabilitation: Traineeships are available for students in the Vocational Rehabilitation program. Grants include tuition plus $3,000 for the 12 month appointment. Priority is given to minorities, handicapped or persons with one year or more evaluation or adjustment experience.

Advanced Opportunity Program: Grants are available to a limited number of minority/disadvantaged students for graduate study. Application for this type of grant should be made to the Graduate College and through the Financial Aids office for determination of need.

FINANCIAL AIDS OFFICE

The following programs are administered by the Financial Aids office:

Wisconsin State Student Loan: A loan is available from the Wisconsin State Student Loan Fund for those students who are residents of Wisconsin and are in need of loan assistance. The maximum amount of such loans is limited to $5,000 annually for graduate students. There is no interest charged while the borrower is in attendance at Stout. Interest at a seven percent rate is charged, beginning nine months after the borrower terminates his attendance at Stout.

Guaranteed Student Loans: This loan is available through private lenders (banks, savings and loan associations and credit unions). Applications and additional information may be obtained at participating lending agencies.

National Direct Student Loans: The National Direct Student Loan program is available to graduate students in need. The amount of the loan is determined by the availability of funds and the need of the student. Repayment of the loan is to be completed within a 10-year period, which begins nine months after the borrower terminates his program. Interest at three percent per annum accrues at the time the repayment schedule begins. The 50 percent forgiveness feature for full-time teaching has been dropped. However, there is still a forgiveness feature of 100 percent for teachers of the handicapped, teachers employed in low-income areas and Head Start programs.

International Student (Non-Resident Tuition Waiver): Awards are made to students from other countries after admission who have a financial need. The award consists of exemption of nonresident tuition. Interested students should follow all degree application procedures which includes the application for an international student non-resident tuition waiver. Applications should be received by March 15 with awards announced about June 1. The Graduate office will forward the applications to the Financial Aids office.

Work-Study: Graduate students as well as undergraduates may apply for part-time jobs at an hourly rate under the federal work-study program. Students must demonstrate financial need.

OFF-CAMPUS PROGRAMS

Continuing Education Program: The University offers a program of evening and Saturday morning Continuing Education classes. Graduate credits earned through enrollment in these off-campus courses are considered as extension credits. They are transferable to Stout on the same basis as they are to other colleges and universities. Registration for these courses is completed at the first class meeting. Textbooks required for the class by the instructor are made available for purchase at the first class meeting.

Course numbers, titles and content are the same as those offered on the University campus. To be awarded graduate credit for extension work, the student must be admitted to the Graduate College.

Independent Studies: A flexible academic program called Independent Studies is offered by most departments to help develop students into self-directed learners. This program provides more scope and depth in the curriculum by encouraging students to: investigate areas of interest not currently included in the normal course offerings; study areas and develop projects which cut across course boundaries; and delve more deeply into specific parts of an existing offering.

The Independent Studies program is open to all graduate students. (Credits are awarded on the basis of expending approximately 40-50 hours of effort for each credit.) The same conditions for registration apply as for any other course. In addition, approval for an Independent Study course must be obtained. Application forms are available in the office of the school dean in which school the course is offered. The study is approved by the student's advisor and the chairman of the department most closely related to the particular study area. After this approval, a faculty member is selected jointly by the student and the department chairman to act as a study advisor. Independent Study courses may be pursued while the graduate student is not on campus if prior arrangements have been made.

Field Experience Program: Students in some graduate programs are encouraged to obtain part of their education program off the Menomonie campus through a special graduate level Field Experience program. This program allows a graduate student to receive academic credit for off-campus experiences and study relating to his or her program while employed in an approved field position. The graduate level part of the program has been specifically designed to aid in-service teachers, counselors, and administrators in using summer work experience or supervised observation of business and industry to benefit their performance when they return to their jobs in the fall. Increased time credit towards vocational certification is possible in many situations for students employed in positions relative to their teaching field and enrolled in Stout's Field Experience program.

All necessary forms and reports can be handled by mail and a person enrolled need not be on campus. Application must be made prior to beginning work. Further information and application forms may be secured by contacting the office of the school dean in which school the course is offered.

HOUSING

Limited residence hall facilities are available for students. The University currently provides residence hall accomodations for approximately 2,800 students. Students living in residence halls are required to contract for their meals in the food service facilities as provided. The meal contract plan provides various options.

Rooms may be occupied immediately preceding registration day in the fall. The contract is valid for the entire academic year. Each room is furnished with single beds and innerspring mattresses, dresser, study table, chair and bookcase.

A $75 room deposit is required on all room reservations. The deposit submitted with the residence hall application will be applied against the final payment for the second semester. The deposit will be forfeited if cancellation is received after July 1.

Students are requested not to bring additional furniture, particularly floor lamps. Radios, phonographs, and television sets are permitted in the rooms provided the students comply with the regulations for the use of this equipment. Television sets are available for general use in the main lounge of each building.

At the present time Stout has a limited number of married-student units. These are barrack-type units with two bedrooms, a bath, kitchen alcove, living room and limited storage space. Married-student facilities are also available in the community of Menomonie. Married students are encouraged to obtain housing on their own in addition to seeking the assistance of the University. Inquiries for student housing for applications and current charges for residence hall rooms as well as for married housing should be directed to the University Housing office.

STUDENT SERVICES

University Counseling Center: A Counseling Center serves both a training and service function by providing guidance and school psychology practicum opportunities, a resource center of guidance materials and equipment, and a wide variety of counseling and personal development opportunities.

Health Service: The University maintains a Student Health Center located at the extreme north end of the campus. The Health Center is fully staffed from 8:00 a.m. to 4:30 p.m. A physician is on duty from 9:00 a.m. to 12:00 p.m. and 1:00 p.m. to 4:00 p.m., Monday through Friday during the academic year. Standard examining and laboratory facilities are available. The Health Center is supported by a student health fee. It is not open during the summer session.

Recreation: Athletic facilities include the Health and Physical Education Center, Nelson Field and 10 outdoor lighted tennis courts. The Center offers open recreation, intramural athletics and physical education instructional classes. The building provides courts for tennis, badminton, volleyball, basketball, and archery, as well as individual rooms for weight training, gymnastics and dance. A swimming pool is also located in this area.

Lake Menomin, within the city, offers the finest in fishing, swimming, boating, canoeing and water skiing. Similar opportunities are available on the nearby lakes. Ski enthusiasts will find excellent opportunities within commuting distance. Game hunting (bird and deer) opportunities are to be found in the immediate vicinity. The Menomonie Country Club and the Tanglewood Golf Course have a nine-hole golf course.

Veterans Service: Special assistance is given veterans by the Registrar. This office provides veterans with current information on veterans affairs and maintains liaison with the Veterans Administration, Department of Veterans Affairs, and the County Veterans Service Officer.

Parking: Parking facilities on or near the campus are limited. Students who expect to use University-owned or controlled parking lots must register their vehicles and observe the regulations issued by the Security office. Limited parking adjacent to the residence halls is available to those living in them. The City of Menomonie has restricted parking ordinances which limit street parking both day and night.

Career Planning and Placement Services: Graduate students are urged to register with the Career Planning and Placement Services office, whether they are employed or not. Essentially, this involves completing a placement form.

The Career Planning and Placement Services office is maintained to provide service for seniors, graduate students and alumni. The goal of the office is to give effective support to the placement efforts each individual is expected to make in securing the best position. Every effort is made to bring to the attention of candidates for placement, information about vacancies, trends in supply and demand, data about salaries and conditions of employment, and to recommend effective application techniques.

There is no charge to students for any service provided by the Career Planning and Placement Services while they are enrolled for more than two credits and in the process of seeking a position. However, there will be a $25 late processing fee for all graduates who wish to use these facilities and services if they **do not** establish their credentials in the Career Planning and Placement Services office prior to graduation.

Graduate students are invited to establish a placement file and to make use of these facilities and services when they are within one semester of meeting the requirements for graduation.

Day Care Service: Child care services are available at the Child and Family Study Center. This center provides services to children as well as a practicum experience for Early Childhood Education majors. Programs are available for children two through six years of age. One of these programs is a Day Care Center which operates from 7:30 a.m. - 5 p.m. daily, Monday through Friday.

Other programs are scheduled daily but are limited to a 2½ hour block per day. Additional information on the programs, enrollment and fees can be obtained by writing the Director of the Child and Family Study Center, School of Home Economics, University of Wisconsin-Stout.

DEGREE PROGRAMS

GUIDANCE AND COUNSELING

Master of Science Degree. The program in Guidance and Counseling provides a basic preparation in counseling. This can lead to certification by the State of Wisconsin for school counseling and employment in the public schools or to employment in a variety of counseling and counseling related positions in other than school settings.

Students who seek certification from the Wisconsin Department of Public Instruction must choose either the elementary or the secondary school option, or may elect to meet both elementary and secondary requirements for certification as a school counselor on a K-12 basis. Students desiring to be certified for counseling positions in the Vocational, Technical and Adult Education System, and who can meet the teacher certification and experience requirement for that system, may elect to follow the secondary certification program or the vocational-technical school program.

Students interested in the mental health field should apply for the degree without a concentration. Those with a specific interest in either employment counseling (for positions in the Job Service) or in alcohol and drug abuse counseling should apply for the appropriate concentration.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

Applicants for any of the certification concentrations must hold a teaching certificate valid in Wisconsin and have completed two years of teaching experience to be eligible for endorsement as a school counselor. If the applicant cannot meet this requirement, the alternative of a one-year full-time internship following completion of the certification program will enable the student to become certified as a school counselor in Wisconsin. Only a limited number of students will be admitted to the internship program and no internship can be guaranteed.

Applicants for other than certification programs are not required to have any particular background or work experience. However, employability following graduation will depend to a considerable extent on previous relevant work or life experience and undergraduate preparation. The more relevant undergraduate preparations include psychology, sociology, social work, rehabilitation, child development and family life education.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

CERTIFICATION CONCENTRATIONS

Core Requirements (18-22 Cr.)		Credits
413-788	Counseling Process Laboratory	2
413-675	Counseling Theory	2
413-752	Group Dynamics	2
489-753	Psychometric Theory and Application	2
421-740	Research Foundations	4
413-790	Supervised Counseling Practicum	4
413-731	Problems in Counseling (Plan B)	2
or		
413-770	Thesis in Counseling (Plan A)	6

General Certification Requirements (10 Cr.)		
489-753A	Guidance Laboratory	1
413-733	Career Development Process and Issues	2
413-733A	Career Information Laboratory	1
413-765	Organization and Administration of Guidance	3
431-630	Mainstreaming the Special Student	3

Socio-Biology Selective (One course required, 2-3 Cr.)		
308-650	Neuroanatomy	2
308-651	Psychobiology	2
300-720	Current Human Problems	2
387-575	Sociology of Minority Groups	3
387-710	Sociological Foundations for Guidance	3

Psychology Selective (One course required, 2-3 Cr.)		
479-760	Personality	2
479-850	Psychology of Development	3
479-552	Psychology of Adolescence	3
413-760	Theory and Techniques of Behavior Modification	2

413-648	Learning Disabilities in Young Children	2

Elementary Counseling Concentration (5 Cr.)		
489-753B	School Psychology Laboratory	1
413-629	Guidance in the Elementary School	2
413-705	Play Therapy	2

Note: Elementary counseling students who have never taken a personality theory course or a child psychology course (or developmental psychology) will be required to take 479-760 and/or 479-850 for their psychology selective.

Secondary Counseling Concentration (2 Cr.)		
413-787	Career Placement Services	2

Note: Secondary counseling students who have never taken a personality theory course or an adolescent psychology (or developmental psychology) course will be required to take 479-760 and/or 479-552 for their psychology selective.

K-12 School Counseling

Students who wish to be endorsed for all levels of school counseling must meet all the requirements of both the elementary and secondary counseling concentrations. In addition, the practicum placement will be divided between an elementary school and a secondary school placement. The total number of required credits for K-12 endorsement will be 39-50 depending on whether there are deficiencies to be made up.

Vocational-Technical School Concentration (6 Cr.)		Credits
413-787	Career Placement Services	2
469-502	Principles of Vocational, Technical and Adult Education	2
469-792	Administration of Vocational, Technical and Adult Education	2

Note: Vocational-Technical School counseling students who have never taken a personality theory course will be required to take 479-760 for their psychology selective.

INTERNSHIP REQUIREMENTS: Students who will be certified for school counseling by taking a one-year internship will be required to take additional course work for certification to meet teacher preparation competencies. The courses required prior to endorsement for certification are the following:

421-714	Teaching Strategies	4
421-700	Philosophy of Modern Education	2

One of the following curriculum courses:

421-750	Curriculum Theory and Practice	2
421-738	Elementary School Curriculum	2
421-739	High School Curriculum	2

NON-CERTIFICATION CONCENTRATIONS

Core Requirements (18-22 Cr.)

413-788	Counseling Process Laboratory	2
413-675	Counseling Theory	2
413-752	Group Dynamics	2
489-753	Psychometric Theory and Application	2
421-740	Research Foundations	4
413-790	Supervised Counseling Practicum	4
413-731	Problems in Counseling (Plan B)	2
or		
413-770	Thesis in Counseling (Plan A)	6

Alcohol and Drug Abuse Counseling Concentration (12 Cr. minimum)

459-520	Rehabilitation of the Chemically Dependent	3
or		
110-574	Alcohol, Drugs and Accident Prevention	3
212-650	Introduction to Marriage and Family Counseling	3
413-721	Alcohol and Drug Abuse Treatment Programs	2
413-666	Counseling the Alcoholic and the Family	2
	Elective	2

Employment Counseling Concentration (12 Cr.)

413-733	Career Development Process and Issues	2
459-717	Occupational Analysis and Information	2
469-534	Task Analysis	2
489-753A	Guidance Laboratory	1
	Electives	5

DEGREE WITHOUT CONCENTRATION

Those students whose professional objectives cannot be met within one of the established concentrations described above have the option of taking the Core Requirements (18-22 Cr.) and developing a set of elective course work with the approval of the program director. Electives will be chosen that will best meet the professional interests and needs of the student. The practicum placement will be made in a setting as close as possible to the student's employment objectives. Available practicum placements and elective course work is best suited to those students who are interested in working as counselors in a mental health setting.

Preparation for Further Individual and Professional Development

Students who already hold a master's degree in some field of education but who are not certifiable for counseling may choose to meet certification requirements without the necessity of completing a second master's degree. The program director will evaluate transcripts and identify those courses that will be necessary

for endorsement as a school counselor. Another option for master's degree holders is the Professional School Counselor Life Certificate. This certificate requires a planned program of 18 credits beyond the master's degree. Programs must be approved in advance by the program director in order to count toward this certification. Alternatively, the Ed.S. degree in Guidance and Counseling will also lead to the life certificate.

Full-Time or Part-Time Study

Extended field placement required in these programs averages two days per week for one semester or one day per week for two semesters. Part-time study while holding a full-time job is very difficult unless the employment provides considerable flexibility. The practicum may not be completed in the summer session because the time available is not extensive enough and regular school placements are not available. Therefore, full-time study for at least one calendar year is strongly recommended. A substantial portion of all concentrations may be completed part-time by attending summer sessions and during the regular semesters for late afternoon and evening classes. However, a substantial commitment for one or two semesters will be required at the point where the student is ready for the practicum field placement.

HOME ECONOMICS-CLOTHING, TEXTILES AND RELATED ART

Master of Science Degree. The program in clothing and textiles provides an opportunity for development of professional competencies in clothing or textiles. It prepares students for professional positions in business, merchandising, industry, or extension services or provides concentrated study for persons planning to teach at the secondary, post-secondary, or college level. An individualized program will be planned with the program advisor.

A student may choose a concentration in either clothing or textiles, with electives chosen from an area which will support the major concentration. Programs for students planning to teach may include courses from both concentrations and courses in professional education.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

In addition to persons with a background in clothing, textiles and related art, students from art, the physical sciences, business and related fields may wish to enter the program.

Students entering the clothing concentration should have completed basic courses in clothing construction and textiles. Students choosing the textiles concentration should have completed undergraduate courses in textiles.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree.

PROGRAM REQUIREMENTS

Preparation in Research (6-10 Cr.)		Credits
421-740	Research Foundations	4
214-799	Thesis-Clothing and Textiles (or)	6
214-798	Problems in Clothing and Textiles (or)	2
214-XXX	Clothing and Textiles Design Project	6

Concentration in Clothing (12-20 Cr.)		
214-566	Apparel Construction-Knit and Stretch Fabrics	2
214-580	Flat Pattern	3
214-605	European Study Tour	3-6
214-610	History of Costume: Ancient to European 1900	3
214-611	History of American Costume	3
214-617	Social-Psychological Aspects of Clothing	3
214-639	National Study Tour to Fashion Industry	1
214-655	Recent Developments in Clothing and Textiles	2
214-666	Tailoring	3
214-680	Draping	3
214-681	Apparel Design-Draping	1
214-765	Workshop in Clothing and Textiles	1-2
214-682	Apparel Design-Flat Pattern	1
214-780	Advanced Draping	1
214-781	Advanced Flat Pattern	1
214-799	Independent Study	2-4

Concentration in Textiles (12-20 Cr.)		
214-640	Textile Science	3
214-545	Commericial and Household Textiles	2
214-590	Practicum in Textile Design or	3
214-592	Practicum in Textile Printing or	2
214-696	Structural Design and Weaving	2
214-605	European Study Tour	3-6
214-540	Textile Evaluation	3
214-655	Recent Developments in Clothing and Textiles	2
214-645	U.S. Textile Study Tour	2
214-695	Historic and Contemporary Fabrics	3
214-765	Workshop in Clothing and Textiles	1-2

311-521	Textile Chemistry	3
245-658	Experimental Laundry Procedures	2
214-755	Topics in Clothing and Textiles	1-2
214-799	Independent Study	2-4

Concentration for Teaching (18-20 Cr.)
Select at least 12 credits from the individual concentrations above, plus six credits from education.

Preparation for Further Individual Development (To total 30 Cr.)
Supporting electives may be chosen from any of the following areas: art, psychology, sociology, economics, management, business, chemistry, administration, communication, vocational education, anthropology and history.

*Four credits of internship required for those without retailing experience. Persons with retailing experience may not receive more than 4 credits for internship.

HOME ECONOMICS-FOOD SCIENCE AND NUTRITION

Master of Science. The primary objectives of the master's program in Food Science and Nutrition are to increase professional proficiency, to develop research competence, and to promote precision in communication. Those who complete the academic requirements for this advanced degree should be able to think more independently and to respond intelligently to challenging ideas. The program prepares students for advanced postitions in teaching, dietetics, a wide range of opportunities in business and industry, and for continuing education. Individual programs must be planned in consultation with the major advisor.

ADMISSION

To be admitted to this program with full status, the applicant must have a bachelor's degree from an accredited college or university, and have an overall grade point average of at least 2.75.

Students from a variety of educational backgrounds are eligible for admission. In addition to home economics majors, students from the biological, chemical, and social sciences will find appropriate applications within the program.

A deficiency in these admission requirements does not preclude admission, but may necessitate completion of additional undergraduate courses and/or increase the number of graduate credits required to earn the degree.

REQUIREMENTS

The requirements for this degree include the following: (a) completion of at least 30 semester credits with an overall grade point average of 3.0 or better; (b) inclusion of a minimum of 15 of the 30 credits in courses open only to graduate students—700 level; (c) approval of degree candidacy at the appropriate time; and (d) completion of the research and professional requirements.

Research Preparation (6-10 Cr.)		Credits
421-740	Research Foundations	4
229-770	Thesis in Food Science and Nutrition (or)	6
229-747	Problems in Food Science and Nutrition	2

A concentration may be selected from those below or patterns of advisement developed in consultation with the program director to meet individual needs of the student. All advisement patterns include the research preparation requirements.

Professional Preparation (14-24 Cr.)
Select 14-24 credits from concentration A, B, or C, or 20-24 credits from concentration D or E

A—Foods (14-24 Cr.)		Credits
229-638	Experimental Foods	3
229-642	Advanced Foods	2
229-661	Social and Cultural Aspects of Foods	2
229-708	Food Seminar	2
229-730	Recent Developments in Food Science	2
229-746	Food Innovations	3
229-756	Advanced Experimental Foods	3
229-799	Independent Studies in Food Science	1
308-506	Food Microbiology	3
311-515	Food Chemistry	3
311-535	Instrumental Methods of Analysis	3

B—Nutrition (14-24 Cr.)		
229-606	Nutrition Education	3
229-618	Diet Therapy	3
229-633	Maternal and Child Nutrition	3
229-705	Geriatric Nutrition	2
229-710	Clinical Nutrition	3
229-701	Trends in Nutrition	2
229-711	Nutrition Seminar	2
229-702	Minerals and Vitamins	3
229-729	Proteins	3
229-736	Carbohydrates and Lipids	3
229-799	Independent Studies in Nutrition	1

C—Food and Nutrition (14-24 Cr.)
In consultation with the program director select courses from concentrations A and B with a minimum of 5 credits from the concentration of lesser interest.

D—Food and Food Service Administration (20-24 Cr.)

Food (8-10 Cr.)		Credits
229-620	Food Styling*	2
229-715	Menu Analysis and Planning*	3
229-720	Workshop in Foods	1
229-740	Food Preservation Technology	3
229-746	Food Innovations	3
229-756	Advanced Experimental Foods	3
229-708	Food Seminar (or)	2
229-730	Recent Developments in Food Science	2

and:

Food Service Administration (12-14 Cr.)		
150-600	Organizational Leadership	3
229-701	Trends: Inquiry Into the Future of Food and Nutrition*	2
229-706	Instructional Techniques in Food Systems*	2
245-521	Food Service Equipment	2
245-626	Employee and Labor Relations in the Hospitality Industry	2
245-656	Microwave Oven	2
245-670	Hospitality Industry Financial Analysis, Budgeting and Forecasting	3
245-700	Management Concepts in Food Administration*	1
245-701	Implementation of Management Concepts in Food Service Administration*	1
245-702	Operational Controls in Food Service Management*	1
245-703	Seminar in Analysis of Food Service Management Systems*	3
354-741	Computer Programming Techniques**	2

Those who have not taken 245-501 or 245-513 or the equivalent will be required to take these courses in addition to the concentration requirements.
*Required
**Not required of those who have had the undergraduate equivalent experience.

E—Nutrition and Food Service Administration (20-24 Cr.)
Either:

Nutrition—Subgroup 1 (8-9 Cr.)		Credits
229-633	Maternal and Child Nutrition	3
229-705	Geriatric Nutrition	2
229-710	Clinical Nutrition	3
229-721	Workshop in Nutrition	1

Or:

Nutrition—Subgroup 2 (9-10 Cr.)

229-702	Minerals and Vitamins	3
229-720	Proteins	3
229-736	Carbohydrates and Lipids	3
229-721	Workshop in Nutrition	1

And:

Food Service Administration (12-14 Cr.)

150-600	Organizational Leadership	3
229-701	Trends: Inquiry Into the Future of Food and Nutrition*	2
229-706	Instructional Techniques in Food Systems*	2
245-521	Food Service Equipment	2
245-626	Employee and Labor Relations in the Hospitality Industry	2
245-656	Microwave Oven	2
245-670	Hospitality Industry Financial Analysis, Budgeting and Forecasting	3
245-700	Management Concepts in Food Administration*	1
245-701	Implementation of Management Concepts in Food Service Administration*	1
245-702	Operational Controls in Food Service*	1
245-703	Seminar in Analysis of Food Service Management Systems*	3
354-741	Computer Programming Techniques**	2

Those who have not taken 245-501 or 245-513 or the equivalent will be required to take those courses in addition to the concentration requirements.

*Required

**Not required of those who have had the undergraduate equivalent experience.

Preparation for Further Individual Development (0-10 Cr.)

Electives are selected according to the candidate's background, interests and objectives. Frequently, courses are chosen from other areas of home economics or from the following fields: business administration, biology, chemistry, economics, education, English, journalism, applied mathematics, mathematics, physics, psychology, sociology, speech, vocational rehabilitation, industrial management and media technology.

HOME ECONOMICS EDUCATION

Master of Science Degree. The home economics education program has three concentrations: comprehensive, specialized and certification. Within the comprehensive and specialized concentrations the student may emphasize one or more of the substantive areas of home economics, such as avocational education, child development, clothing and textiles, consumer education, family life, foods and nutrition, home equipment, hospitality, or housing and related art. The

comprehensive concentration is for those persons who are in, or wish to prepare for a position which requires knowledge of several or all of the substantive components of home economics. The specialized concentration is for those persons who are in, or who wish to prepare for a position which requires in depth understanding of one of the substantive fields within home economics. The certification concentration is for persons who are not presently certified but who wish to become certified to teach secondary home economics in Wisconsin. Each student's program is individually planned to develop the competencies needed for positions such as elementary and secondary vocational teachers or non-vocational teachers; post-secondary or university-level teachers; state, district, or local extension educators; supervisors, coordinators, administrators; curriculum consultants in business and industry and other educational positions related to the comprehensive or specialized components of home economics.

COMPREHENSIVE PROGRAM CONCENTRATION

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. This bachelor's degree will generally have been earned in the major of home economics education. However, any of the specialized substantive areas of home economics may be appropriate. The determining factor in the choice of this concentration is that the applicant plans to teach or supervise in a comprehensive program of home economics upon completion of the degree program.

If the applicant has not completed specific courses in education, five credits will be required in addition to the 30 credits required for the master's degree. These credits may be completed concurrently with the graduate credits.

REQUIREMENTS

The requirements of this degree include completion of a minimum of 30 semester hours of graduate credit with a minimum cumulative grade point average of 3.0. Stout offers such a variety of courses in home economics and in education that these 30 credits will be individually planned with the program director within the following guidelines.

Preparation in Research (6-10 Cr.)

Professional Education (6-16 Cr.): Home Economics Education (minimum of 6 Cr. is required, including 242-708 Curriculum Studies in Home Economics Education and 242-710 Applied Evaluation in Home Economics); Education; Vocational Education; Psychology; and Media Technology.

Home Economics Substantive Area (6-18 Cr.): Avocational Education, Child Development, Clothing and Textiles, Consumer Education, Family Life, Foods and Nutrition, Home Equipment, Home Management, Hospitality, Housing and Related Art.

SPECIALIZED PROGRAM CONCENTRATION

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

An applicant whose goals involve teaching or supervising a specialized substantive component of home economics may have a undergraduate degree in any of a variety of fields. Examples of these include hotel and restaurant management, hospitality, food and lodging, food service, dietetics, fashion merchandising, clothing and textiles, early childhood, child development, family life, housing, consumer education, home management, nutrition education, and home economics education.

It is recommended that those applicants holding a degree related to business or industry should have completed a minimum of two years of work experience in the specific professional substantive area.

Because this is a program which is planned primarily to prepare educators, the applicant may be required to complete a minimum of five credits, plus an approved teaching experience in addition to the 30 credits required for the master's degree. These credits may be completed concurrently with the graduate credits.

REQUIREMENTS

The requirements of this degree include completion of a minimum of 30 semester hours of graduate credit with a minimum cumulative grade point average of 3.0. Because Stout offers a variety of courses in home economics and in education and the background and goals of persons in this track are as varied as the specializations, these 30 credits will be individually planned with the program director within the following guidelines.

Preparation in Research (6-10 Cr.)

Professional Education (12-16 Cr.): Home Economics Education, Education, Vocational Education, Psychology, and Media Technology. 242-708 Curriculum Studies in Home Economics and 242-710 Applied Evaluation in Home Economics are required.

Major Substantive Area (8-12 Cr.)

CERTIFICATION PROGRAM CONCENTRATION

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. Prior to full admission the student must complete or have completed 34 credits in home economics as outlined below. These undergraduate credits may be completed concurrently with the graduate credits. The primary purpose of this concentration is to prepare persons who wish to become certified to teach secondary home economics in Wisconsin.

Home Economics Credits Required Before Full Admission

		Credits
212-124	Child Development I	3
212-250	Family Relations I	3
214-140	Textiles I	3
214-266	Apparel Construction	3
229-124	Foods	4
229-212	Nutrition	3
229-318	Meal Management Practicum	2
245-676	Family Finance	2
245-275	Management of Family Resources	3
212-XXX	Mini Courses in Family Relationships	1
245-250	Family Housing	2
2XX-XXX	Home Economics Electives*	5

REQUIREMENTS

The requirements for this degree include completion of a minimum of 30 semester hours of graduate credit with a minimum cumulative grade point average of 3.0. In order to be recommended for certification, the student must complete an approved student teaching experience for undergraduate credit and meet human relations requirement.

Preparation in Research (6-10 Cr.): 421-740 Research Foundations (4 Cr.) and 242-770 or 775 Research Paper (2-6 Cr.) are required.

Professional Education (12-16 Cr.): 479-530 Advanced Psychology of Learning (2 Cr.), 242-708 Curriculum Studies in Home Economics (2 Cr.), 421-581 Reading Methods in Secondary Schools (2 Cr.), 242-710 Applied Evaluation in Home Economics (2 Cr.), 421-714 Teaching Stategies (4 Cr.), and (0-4 Cr.) of electives are required.

Home Economics Substantive Area* (12-16 Cr.): including 212-685 Seminar in Culturally Distinct Child and Family*** (3 Cr.): Electives.

Additional Requirements (8 Cr.): 242-443 Clinical Seminar in Home Economics Education** (2 Cr.) and 242-444 Practicum in Home Economics Education** (6 Cr.) are required.

*For certification the student must have a total of 6 credits in each of the following areas: child development, family relations, food and nutrition, clothing and textiles, consumer education and management, and housing and equipment.

**To be taken for undergraduate credit.

***To be taken to fulfill the Wisconsin Department of Public Instruction human relations requirement.

INDUSTRIAL EDUCATION

Master of Science Degree. This program is especially designed for individuals with undergraduate preparation in industrial arts, industrial education, and related fields. However, it is also open to others interested in entering the industrial education field. (See optional program in this section.)

Specifically, the curriculum is designed to provide advanced instruction of value to: (a) secondary school industrial arts teachers, supervisors and administrators; (b) junior college, college and university industrial arts teachers, supervisors and administrators; (c) those desiring knowledge and competence related to American industry; (d) those who have interest in special student groups such as the disadvantaged, the slow learner, the underachiever, the handicapped and the gifted; and (e) those who desire vocational-industrial certification, but do not yet have the work experience.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree in Industrial Education (or equivalent) from an accredited college and have an overall grade point average of at least 2.75.

In addition, the applicant should have an undergraduate major in industrial arts education or its equivalent. This assumes preparation and certification (or eligibility for certification) for teaching industrial arts.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree. (See Optional Programs in this section.)

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Preparation in Research (7-11 Cr.)		Credits
190-739	Introduction to Problems in Industrial Education	1
421-740	Research Foundations	4

The following three options are available for the research experience, each involving a research report:

190-735	Problems in Industrial Education	2
190-740	Synthesis of Problems in Industry and Technology	2
190-770	Thesis—Industrial Education	6

Preparation Basic to Program (14 Cr. minimum)

Take Both:

500-700	Program Seminar in Industrial Education	0
190-704	History of Industrial Education	2

Select at least one from each cluster:

Cluster 1. Foundations in Philosophy or Psychology

421-700	Philosophy of Modern Education	2
421-705	Social Thought of American Educators	2
479-730	Advanced Psychology of Learning	2
365-500	Philosophy of Technology	3
365-550	Ethical Valuing	2
300-720	Current Human Problems	2

Cluster 2. Facilitation and Management of Learning

190-533	Shop Planning and Equipment Selection	2
190-637	School Shop Organization and Management	2
421-715	Teaching Strategies	4
421-640	Educational Sciences	2

Cluster 3. Evaluation

150-713	Introduction to Education Systems Analysis	3
421-541	Classroom Evaluation	2
421-741	Design and Evaluation of Curriculum	4
421-742	Program Evaluation	3

Cluster 4. Technical

110-798	Problems in Industry and Technology (Energy and Transportation)	2
130-798	Problems in Industry and Technology (Graphic Communications)	2

150-730	Advanced Technical Problems (Industrial Management)	2
170-798	Problems in Industry and Technology (Materials and Processes)	2
600-750	Problems in Industry and Technology (Photography)	2

Select at least two from this cluster:

Cluster 5. Curriculum and Program Development

190-710	Curriculum Innovation Affecting Industrial Education	2
421-750	Curriculum Theory and Practice	2
190-600	Rationale for American Industry	2
*190-638	Course Construction	2
*600-740	Instructional Development	2

*May take either, but not both.

Preparation for Further Individual Professional Development

For students planning careers in teaching, it is recommended that their technical work (graduate and undergraduate) total at least 45 semester hours. Additional electives will be selected with approval of the graduate program director. A complete list of graduate work appropriate to this degree program is maintained by the program director.

OPTIONAL PROGRAMS

Persons who hold a bachelor's degree in another field and wish to become certified to teach industrial education while also earning the master's degree may do so in the following programs.

ADMISSION

Prior to full admission to the master's degree program the student must develop an appropriate technical background by completion of the following undergraduate work. (See Undergraduate Bulletin for course descriptions.) Some graduate work may be taken concurrently but ordinarily these undergraduate deficiency credits will take first priority:

		Credits
110-101	Energy in Industry	2
110-103	Power Mechanics	2
110-204	Electricity	3
130-700	Communications	2
130-110	Drafting	2
130-140	Graphic Arts	2
150-115	Understanding Industry	2
150-314	Production Systems	3
170-101	Processes: Concepts	3
170-205	Design for Industry	2
170-270	Light Building Construction	2

	Technical Electives	9
	Total	34

M.S. IN INDUSTRIAL EDUCATION (for those not certifiable for teaching in any field).

Professional Preparation* (16 Cr.)

421-700	Philosophy of Modern Education	2
479-730	Advanced Psychology of Learning	2
421-714	Teaching Strategies	4
421-750	Curriculum Theory and Practice	2
190-710	Curriculum Innovation Affecting Industrial Education	2
190-638	Course Construction	2
421-682	Reading Methods—Secondary School	2

Teaching Practicum in Industrial Education* (8 Cr. undergraduate)

190-408	Student Teaching (or)	
190-488	Internship Teaching	8

*(These 12 credits of professional preparation must be completed prior to student or intern teaching: 421-700, 479-730, 421-714, 190-710 and 190-638.

Preparation in Research (6-10 Cr.)

421-740	Research Foundations	4

(See previous reference to Preparation in Research for options.)

Preparation Basic to Program (5 Cr.)

500-700	Program Seminar in Industrial Education	0
190-739	Introduction to Problems in Industry and Technology	1
190-704	History of Industrial Education	2
Any one course from Cluster 4 Technical		2

Technical Electives (5-11 Cr.)

Total undergraduate and graduate technical credits in any combination is at least 45 semester hours.

Human Relations Requirement:

The Wisconsin Department of Public Instruction requires preparation in Human Relations for those desiring initial certification for teaching in Wisconsin.

This requirement may be met by any one of the four following means:

1. By submitting documented evidence of past experience.
2. By developing a plan to incorporate appropriate experiences within the degree program.
3. By satisfactory completion of either a non-credit or a credit independent study package.
4. By an approved plan developed from a combination of the above.

A brochure describing the means of meeting this requirement is available from the graduate program director. The student's approved human relations plan must be filed at the same time as the degree candidacy application, and is subject to approval of the graduate program director and the dean of the graduate college.

M.S. IN INDUSTRIAL EDUCATION—(for those certifiable for teaching in fields other than industrial education)
Upon completion of the undergraduate technical deficiency, students who are certifiable teachers in fields other than industrial education may enter the standard program for the Master of Science degree in industrial education outlined previously with the stipulation that their programs will include sufficient graduate technical credits so that the total undergraduate and graduate technical credits in any combination is at least 45 semester hours of technical credits.

Student or intern teaching in industrial education (8 undergraduate credits) is required. Note "Teaching Practicum" in the previous section.

The human relations requirement of the Wisconsin Department of Public Instruction is required for those seeking initial certification in Wisconsin. Note "Human Relations Requirement" in the previous section.

Preparation Through Advisement Patterns (select one)

This program is designed so that at least one of a variety of advisement patterns can be developed within the framework of the industrial education degree programs. Beyond the preparation in research (7-11 Cr.) and preparation basic to the program (14 Cr.) students will choose in consultation with their program director an advisement pattern supporting their work-role/life-role goals and select learning experiences (course work) which will support them in such areas as: industrial education teacher, supervisor or administrator; in elementary, middle-junior high school, senior high school, post high school, college or university, industry or other selected areas. One example pattern is:

Vocational, Trade and Industrial Education (6 Cr.)

469-502	Principles of Vocational, Technical and Adult Education	2
421-700	Philosophy of Modern Education	2
479-730	Advanced Psychology of Learning	2

MANAGEMENT TECHNOLOGY

Master of Science Degree. This program provides educational experiences that prepare persons for middle management positions in operations management. Operational specialties in Industrial Management or Construction Management are available. Other options can be developed for students that desire technological specialties.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college, have an overall grade point average of at least 2.75, and have the equivalent of two years of appropriate work or military experience.

Persons holding industrial technology, business administration, engineering management or similar related undergraduate degrees normally have appropriate undergraduate course work and are admitted without deficiencies.

Students who have not completed the required work experience, or who have other deficiencies in undergraduate course work may be admitted on provisional status. These students may be required to complete additional undergraduate work, increase the amount of graduate credit required to earn the degree, and/or gain industrial experience or complete an internship experience prior to earning the degree.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better, a minimum of 15 credits must be in courses open only to graduate students— 700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Professional Foundations (11 Cr.)

150-700	Systems Analysis and Design	3
150-710	Seminar in Industrial Operations	3
150-720	Foundations in Industrial Operations*	2
150-740	Introduction to Decision Theory	3

Leadership (minimum of 7 Cr.)

150-600	Organizational Leadership	3
150-660	Industrial Management	2
160-690	Administrative and Business Policies	3
212-535	Seminar on Self-Growth	2
320-720	Labor and Industrial Relations	2
413-752	Group Dynamics	2
421-830	Administrative Behavior	3
459-717	Occupational Analysis and Information	2
479-570	Assertive Training	2
479-581	Industrial Psychology	2
479-760	Personality	2
	Other Approved Electives	2-4

Operational Specialty (minimum of 9 Cr.)

The following courses are typical of those taken by students that specialize in Industrial Management or Construction Management.

110-581	Principles of Industrial Safety	3
110-583	Voluntary OSHA Compliance	2-3
110-782	Occupational Safety Programming	3
130-526	Building Construction Specifications	2
130-629	Land Use Planning	3
150-505	Production and Inventory Control	3
150-510	Production Processing	3
150-520	Quality Assurance	3
150-530	Human Factors Engineering	3
150-540	Time & Motion Study	3
150-650	Introduction to Operations Research	3
150-730	Advanced Technical Problems - Industrial Management	2-6
170-515	Metallurgy	3
170-535	Tool & Die Making	2
170-537	Numerical Control in Manufacturing	3
170-570	Estimating & Analyzing Construction Costs	3
170-670	Systems Approach to Construction Management	3
	Other Approved Electives	0-9

Culminating Integrative Experience

	Synergistic Experience: Advanced Manufacturing	
150-790	Systems**	3

*A faculty tutor is assigned to guide students' self-development program. Strengths and deficiencies are identified and the student culminates the experience with both oral and written matriculation to candidacy examinations.

**All students in the program are required to take this capstone course which serves as a culminating field project requirement. The student identifies an existing problem area in a cooperating industry and presents an operational solution to the problem.

MARRIAGE AND FAMILY COUNSELING

Master of Science Degree. The offerings are designed to develop specific competence in the following areas of Marriage and Family Counseling: counseling services, consultation, coordination, referral, psychological assessment and inventory and research and evaluation. This program is designed to prepare people for work in mental health clinics, family life agencies, hospitals, industry, schools and/or private practice. The core of the program is experientially and practically orientated. This program is fully accredited by the American Association of Marriage and Family Therapists.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. Applicants may be admitted on probationary status if their overall grade point average is at least 2.25, but less that 2.75. Applicants who have less than a 2.25 overall grade point average, but have relevant work experience since receiving the bachelor's degree and who are otherwise judged qualified as indicated below, may qualify for admission by taking a full credit load of selected undergraduate courses during the summer session or regular session and attaining a 3.0 grade point average.

It is recommended that the applicant have an undergraduate degree with major emphasis in one of the behavioral sciences or a closely related field. Applicants with deficiencies may be required to take additional undergraduate or graduate courses prior to attaining full status in the program. Students must complete the admissions process no later than March 15 of the year they plan to enroll.

When the number of students applying exceeds the number that can be accommodated, students will be admitted on the basis of academic performance, and other factors appropriate for consideration as listed below:

1. Work experience in a helping profession, i.e., counseling, social work, psychology, agency work, clergy, and education.
2. Letters of recommendation from employers and consumers of services provided by the applicant.
3. Ratings of the individual as determined by a screening committee.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 40 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; (b) approval for degree candidacy at the appropriate time; (c) a course distribution as outlined below:

Prerequisites

The successful completion of university level courses in counseling theories, personality, and abnormal psychology.

Professional Foundations (5 Cr.)		Credit
212-660	Current Sex Research	1
212-653	Couples Communication Training	2
413-752	Group Dynamics	2

Research (6-10 Cr.)		
421-740	Research Foundations	4
500-735	Investigations in Marriage and Family Counseling (or)	2
	Thesis in Marriage and Family Counseling	6

Preparation Basic to Program (24 Cr.)

212-650	Introduction to Marriage and Family Counseling	3
212-651	Marriage and Family Counseling Seminar	3
212-793	Practicum in Marriage and Family Counseling	4
212-794	Practicum in Marriage and Family Counseling	4
413-744	Psychometric Aids to Marriage and Family Counseling	2
413-793	Practicum in Marriage and Family Counseling	4
413-794	Practicum in Marriage and Family Counseling	4

Electives (5 Cr.) Choose from courses such as the following:

212-580	Future of the Family	1
212-581	Dynamics of Marital Interaction	2
212-607	Parent Counseling	2
212-626	Special Topics in the Study of Family Life	3
212-680	Aged Person and His Family	1
212-685	Seminar on the Culturally Disadvantaged Child and Family	3
212-707	Issues and Problems in Parent Education	2
212-728	Family Life Issues	2
212-795	Practicum in Marriage and Family Counseling	2
245-676	Family Finance	2
326-525	Advanced Technical Writing	3
326-546	Research Reporting	2
365-550	Ethical Valuing	2
387-525	Sociology of Leisure	3
387-530	Sociology of the Community	3
387-540	Sociology of Work	3
387-560	Sociology of Juvenile Delinquency	3
387-575	Sociology of Minority Groups	3
387-710	Sociological Foundations of Guidance	3
413-647	Behavior Problems of Children	2
413-666	Counseling the Alcoholic and the Family	2
413-681	Psychology of Reading	2
413-705	Play Therapy	2
413-745	Assessment of Personality	2
413-750	Appraising the Individual	2
413-760	Theories and Techniques of Behavior Modification	2
413-795	Practicum in Marriage and Family Counseling	2
413-890	Multiple Counseling and Sensitivity Training	2
413-892	Advanced Counseling Practicum	2
459-585	Mental Retardation	2
459-701	Introduction to Vocational Rehabilitation	2
459-717	Occupational Analysis and Information	2
459-738	Psychological Disability and Work	3
479-632	Perception	3
479-562	Psychology of the Exceptional Child	2
479-570	Assertive Training Procedures	2
500-500	Introduction to Futures Study	2
500-510	Introduction to Women's Studies	2

MEDIA TECHNOLOGY

Master of Science Degree. This degree program is designed to prepare the student for a professional career in Media Technology. At the completion of the program, the student will be qualified to plan, produce and utilize materials, to teach courses in Media Technology, and to develop, supervise and administer media programs in education, industry and government. Stout graduates are serving in such capabilities through the United States and in foreign countries.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

The student should possess a valid teacher's certificate or sufficient credits to qualify for a teaching certificate if they plan to seek employment in the media area in the elementary and secondary schools.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students 700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Preparation in Research (6-10 Cr.)		Credits
421-740	Research Foundations (and)	4
600-722	Problems in Media Technology (or)	2
600-770	Thesis Media Technology	6

Preparation in Educational Theory* (4 Cr. minimum)		
421-738	Elementary School Curriculum (or)	2
421-739	High School Curriculum	2
421-741	Design and Evaluation of Curriculum	4
421-750	Curriculum Theory and Practice	2
421-811	Structuring Knowledge	2
479-730	Advanced Psychology of Learning	2
	Others through advisor's consent	

*Wisconsin Certification requires at least 2 semester hours of credit in curriculum at the level (elementary or secondary) at which the applicant is not certified

as a teacher. Courses numbered 421-738 and 421-739 are required for Audio-Visual Director's Certificate in Wisconsin.

Preparation in Technical (9 Cr.)

600-504	Elementary Photography	2
600-560	Audio-Visual Communications*	2
600-561	Preparation of Audio-Visual Materials*	2
600-630	Audio/Film/TV Production Fundamentals	3

Elective Technical Preparation (4 Cr. minimum)

354-640	Computer Use in Education	3
391-554	Television Programming and Performance	3
600-535	Film: History and Appreciation	3
600-573	Educational Television Utilization	1
600-605	Advanced Photography	2
600-615	Micrographic Fundamentals	1
600-625	Broadcast TV Production Internship	1-4
600-632	TV Production	2
600-636	Motion Picture Production	2
600-645	Color Photography	2
600-650	Multi-Image Development	1-2
600-710	Media Reference Fundamentals	2
600-715	Media Selection	2
600-717	Media Equipment	2
600-720	Media Cataloging and Organization	2
600-730	Media Retrieval Systems	2
600-732	Planning Media Facilities	2
600-740	Instructional Development	2
600-760	Educational Media Administration*	2
600-788	Media Technology Internship	1-3
600-799	Independent Study	1-2
	Others through advisor's consent	

Elective Professional Preparation (4 Cr. minimum)

150-600	Organizational Leadership	3
320-720	Labor and Industrial Relations	2
421-702	Principles of Supervision	2
421-726	Administration	2
479-582	Personnel Management	3
	Others through advisor's consent	

*Courses required for Audio-Visual Director's Certificate in Wisconsin.

PROFESSIONAL DEVELOPMENT

Master of Education-Professional Development. This program is especially designed for persons who have experience in teaching and for persons in business and industry who are interested in enhancing their instructional curriculum development and evaluation skills. Programs planned for individual students will develop competencies which are specifically related to the skills needed in their professional careers. More specifically, this program is designed for:

1. Those bachelor's degree holders who are also certified teachers in the State of Wisconsin.
2. Those who are employed at the vocational-technical post secondary level who hold a bachelor's degree in a content area and whose goal is to develop professional skills and obtain initial certification.
3. Those bachelor's degree holders employed in business and industry whose goals are to develop professional education skills.

ADMISSION

To be admitted with full status to this program, the applicant must (1) hold a bachelor's degree from an accredited institution; (2) have an overall grade point average of at least 2.75, or an average of at least 2.90 in the last one-half of the undergraduate work, or an average of at least 3.0 for no less than 12 semester credits of graduate study; (3) have two academic years of successful teaching experience or its equivalent; and (4) have identified and obtained the program director's approval for the objectives for the student's professional development degree program.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a required course distribution as outlined below and (d) formally stated objectives and a planned program leading to the degree approved by both the program director and the dean of the Graduate College.

Preparation in Research		Credits
421-740	Research Foundations	4
400-765	Problems in Education	2

Preparation Basic to Program

421-744	Seminar in Education	2

Preparation in Chosen Professional Development Area (s)

This program is designed to meet a variety of needs through the development of competencies specifically related to those students need in their jobs. Graduate students will analyze their professional development needs. When appropriate, additional information relative to competencies needed will be sought from the employer or other professional source. This information and the student's goals will be synthesized by the student who with the program director's or designate's approval will identify the objectives for the student's professional development degree program. The student will then develop an educational program based on this planning conference. The skills and knowledge required to achieve these objectives will be matched with graduate level learning experiences such as courses, seminars, internships, and field experiences to develop the competencies identified. The program director or designate and the student will sign the program plan and forward it to the dean of the Graduate College for approval.

Electives (chosen in advance with the approval of the program director or designate.....22

Minimum Total.....30

SAFETY

Master of Science. This graduate level program is designed to prepare individuals for safety coordination and administration. Instructional effort is focused on practical, realistic experiences that will provide students with the capability to develop and integrate loss control systems within any occupational setting.

ADMISSION

To be admitted to this program with full status, the applicant must hold a bachelor's degree from an accredited college with an overall grade point average of at least 2.75. In addition, the applicant must have appropriate academic preparation in an occupational, technical, vocational and/or related area. It is recommended that the candidate have previous professional, vocational, industrial and/or trade experience prior to enrolling in this program.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree.

REQUIREMENTS

The requirements for this degree: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Select One		Credits
150-700	Systems Analysis and Design	3
421-740	Research Foundations	4

Select One		
110-770	Thesis—Safety	6
110-783	Problems in Occupational Safety and Accident Prevention	3

Required Professional Foundations (15 Cr.)		
110-782	Occupational Safety Programming	3
110-771	Foundations in Safety	3
300-542	Industrial Hygiene	3

Select One		
150-600	Organizational Leadership	3
479-581	Industrial Psychology	2

Elective Professional Foundations (7 Cr.)		
110-583	Voluntary OSHA Compliance	2-3
110-584	OSHA Federal Standards and Regulations	2
110-585	Contemporary Problems in Occupational Safety	3
110-586	Fire Protection and Prevention	3
110-587	Human Factors Engineering	3
110-588	Construction Safety	2
110-779	Independent Study in Safety	1-2
110-784	Occupational Safety Internship	4-6
110-785	Occupational Safety and Health Seminar	2
150-660	Industrial Management	2
320-720	Labor and Industrial Relations	2
479-582	Personnel Management	3

Preparation for Further Individual and Professional Development (0-10 Cr.)		
170-501	Technology—Resources—Environment	2
245-501	Food Service Administration	3
245-521	Food Service Equipment	2
309-601	Regulation of Industry	3
309-679	Marketing Research	3
309-690	Administrative and Business Policies	3
311-553	Environmental Chemistry	2
326-516	Technical Writing for Industry	3

387-540	Sociology of Work	3
407-560	Audio-Visual Communications	2
407-561	Preparation of Audio-Visual Materials	2
413-501	Introduction to Guidance	2
413-752	Group Dynamics	2
421-685	Psychology of Adult Education	2
421-702	Principles of Supervision	2
469-534	Task Analysis	2
479-730	Advanced Psychology of Learning	2

There is flexibility in selecting electives if the candidate desires to improve his competency in a specialized occupational area. To exercise this option, the student is required to obtain the advice and consent of the program director and approval of the graduate dean.

COOP STATEMENT

Stout and UW-Whitewater cooperate to provide graduate education in Safety. Students who wish to specialize in traffic safety may earn a degree at Whitewater, with a limited amount of course work transferred from Stout. Similarly, students interested in occupational safety may earn a degree at Stout with a limited amount of course work transferred from Whitewater. Additional information is available from the program director.

SCHOOL PSYCHOLOGY

Programs available: Master of Science in Education, Provisional School Psychologist certification and School Psychologist certification.

MASTER OF SCIENCE IN EDUCATION

The master's degree program is part of the requirements for Wisconsin certification as Provisional School Psychologist and School Psychologist. The degree may be completed with 30-32 credits. Provisional School Psychologist certification will require completion of approximately 55 total credits of required course work. School Psychologist certification will require completion of a minimum of 60 credits and one year of work experience under the supervision of a School Psychologist. Students successfully completing the degree and a minimum of 60 credits will be recommended for endorsement for Provisional School Psychologist and will be eligible for School Psychologist endorsement following a year of supervised work experience.

The program is designed to develop competencies in counseling, psychoeducational assessment, diagnosis and remediation, learning, psychosocial development, mental health, education and research.

ADMISSION

To be admitted with full status to this program the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

No specific undergraduate major is required for entry to the program; strength in the behavioral sciences is preferred, e.g., psychology, sociology, social work, education and child development. Applicants should have at least one undergraduate course or demonstrated competence in each of the following areas: child psychology, adolescent psychology, abnormal psychology and learning theory. Deficiencies in any of this course work will be made up as part of the certification requirements.

No specific experience or prior certification is required but work experience is desirable in related areas, e.g. teaching, guidance, social work, Vista, Peace Corps. The student should enjoy working with people of all age levels and relate well to children and adolescents as well as adults.

REQUIREMENTS

The program outlined below includes all requirements for Provisional School Psychologist and School Psychologist certification. Completion of the degree will require the completion of a minimum of 30 credits and the inclusion of all courses below marked with an asterisk. Credits earned toward the degree must meet a grade point average of 3.0 or better. Students must be approved for degree candidacy at the appropriate time.

All courses listed below are required for Provisional School Psychologist certification. However, students who have taken any of the psychology courses at the undergraduate level will not be required to repeat these courses at the graduate level. The minimum number of graduate credits required to be recommended for certification as a Provisional School Psychologist is 55; for School Psychologist, 60 credits.

Psychological Foundations		Credits
479-850	Psychology of Development (or)	3
479-251	Child Psychology (undergraduate credit only) (and)	3
479-552	Adolescent Psychology	3
479-561	Abnormal Psychology	3
479-530	Psychology of Learning (or)	3
479-730	Advanced Psychology of Learning	2
479-760	Personality	2
489-753	Psychometric Theory and Application*	2
421-740	Research Foundations*	4
489-731	Problems in School Psychology* (or)	2

489-770	Thesis in School Psychology	6

Educational Foundations (6 Cr. minimum)

431-630	Mainstreaming the Special Student	3
421-750	Curriculum Theory and Practice (or)	2
421-738	Elementary School Curriculum	2
421-702	Principles of Supervision (or)	2
421-726	Administration	2

Core Professional Training

489-753B	School Psychology Laboratory (mental testing)*	1
489-743	Advanced Individual Mental Testing*	2
489-745	Assessment of Personality (projectives)	2
489-766	Educational Applications of Neuropsychology	2
489-768	Diagnosis and Remediation of Learning Disabilities*	2
489-768A	Diagnosis Laboratory*	1
489-758	Psychoeducational Disabilities*	3
212-545	Preschool Programming for Mentally Handicapped	3
413-760	Theory and Techniques of Behavior Modification	2
413-705	Play Therapy	2
413-675	Counseling Theory	2
413-752	Group Dynamics	2
413-788	Counseling Process Laboratory*	2
413-790	Supervised Counseling Practicum*	4
489-701	Seminar in School Psychology Services*	2
489-781	Field Practicum in Psychoeducational Services I	3
489-782	Field Practicum in Psychoeducational Services II	3
489-784	Clinical Practicum in Psychoeducational Services I	2
489-785	Clinical Practicum in Psychoeducational Services II	2

*Courses required for the degree.

DEGREE WITHOUT CERTIFICATION

Students who do not intend to work in the schools as school psychologists but who are interested in the mental health field where a preparation emphasizing disabilities, assessment, diagnosis and counseling would be desirable, may elect to complete the degree only. This may be completed in one calendar year. Students choosing this option must take the required degree courses as marked above and electives to total a minimum of 30 credits.

VOCATIONAL EDUCATION

Master of Science Degree. The graduate program in Vocational Education is designed to increase the professional competence of those who plan to serve in a high school or post high school program as a teacher, coordinating teacher, coordinator, supervisor, local vocational education coordinator or administrator of vocational education.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

Applicants with undergraduate degrees and certification in the various subject areas of vocational-technical education are generally eligible.

Applicants with appropriate subject matter backgrounds, but who do not have the required professional education will need to complete, for undergraduate credit, at least one appropriate methods course. This should be completed early in the program.

Applicants for the emphasis in local vocational education coordinator (LVEC) must complete, for undergraduate credit, a course in the principles, issues, and/or philosophy of vocational-technical education. (Request additional admission information from the program director for the LVEC emphasis.)

Prior to award of the degree, the student must present evidence of the necessary amount and kind of occupational experience as specified by the appropriate state certifying agency.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Preparation in Research (6-10 Cr.)		Credit
421-740	Research Foundations	4
469-736	Problems in Vocational Education (or)	2
469-770	Thesis—Vocational Education (or)	6
469-784	Internship—LVEC (for LVEC only)	4-8

Preparation within Program (select one concentration)
Concentration in Teaching (6 Cr.)

469-502	Principles of Vocational, Technical and Adult Education	2
421-700	Philosophy of Modern Education	2
479-730	Advanced Psychology of Learning	2

Plus, appropriate courses in teaching/learning process.

Concentration in Administration (6 Cr.)

421-700	Philosophy of Modern Education	2
469-502	Principles of Vocational, Technical and Adult Education	2
479-730	Advanced Psychology of Learning	2

Plus, appropriate courses in administration.

Concentration in Local Vocational Education Coordination—(LVEC) (18-26 Cr.)
This emphasis is the certification program for Local Vocational Education Coordinators in Wisconsin; similar positions exist in other states.

479-579	Public Relations	2
421-702	Principles of Supervision	2
421-726	Administration	2
421-733	Survey Procedures	2
469-560	Cooperative Occupational Education Programs	2
413-691	Theories of Career Development (or)	2
469-710	Coordination	2
421-750	Curriculum Theory and Practice	2
489-753	Psychometric Theory and Application	2
413-737	Curriculum and Methods in Career Education	2

Concentration in Distributive Education (4 Cr.)

416-701	Issues in Vocational Distributive Education	2
416-702	Improvement of Methods and Materials in Distributive Education	2

Preparation for Further Individual and Professional Development
The student should confer with the program advisor in choosing the elective credits to complete the 30 hour degree requirements. There is considerable flexibility in the program with regard to electives, and they may be taken as needed to fulfill the individual goals and objectives of the student. Generally, electives may be chosen from your technical field (See last paragraph) and from among the following courses:

190-733	Impacts of Technology	2
326-516	Technical Writing in Industry	3
354-741	Computer Programming Techniques	2
387-540	Sociology of Work	3
387-575	Sociology of Minority Groups	3
391-512	Speech Skills for Educators	2
600-560	Audio-Visual Communication	2
600-740	Instructional Development	2

413-501	Introduction to Guidance and Counseling	2
421-705	Social Thought of American Educators	2
421-714	Teaching Strategies	4
421-541	Classroom Evaluation	2
421-733	Survey Procedures	2
421-739	High School Curriculum	2
421-742	Program Evaluation	2
421-750	Curriculum Theory and Practice	2
320-720	Labor and Industrial Relations	2
150-600	Organizational Leadership	3
354-640	Computer Use in Education	3
354-741	Computer Programming Techniques	2
300-700	Current Human Problems	2
150-713	Introduction to Educational Systems Analysis	3
469-534	Task Analysis	2
469-608	Issues in Vocational, Technical and Adult Education	2
421-670	Conference Leading	2
421-681	American Higher Education	2
421-702	Principles of Supervision	2
421-726	Administration	2
469-560	Cooperative Occupational Education Programs	2
469-710	Coordination	2
469-792	Administration of Vocational, Technical and Adult Education	2
469-773	Problems in Coordination	2
469-746	Seminars in Vocational Education	2
469-780	Internship in Vocational Education	4-8
479-579	Public Relations	2

Preparation for further technical development.

Persons preparing to teach will select advanced courses in their subject field. This bulletin lists graduate level technical courses, which are available for graduate credit in certain individual situations. Students are urged to investigate advanced subject matter courses suitable to their particular teaching field; in some teaching areas it may be desirable to transfer them from another institution. However, prior approval to take any course should be obtained.

VOCATIONAL REHABILITATION

Master of Science Degree. This program is designed to develop specific and general competencies required of specialists in the areas of work evaluation and work adjustment. The Master of Science degree program may be completed in 12 months for full time students (39-40 credits). The course schedule is

designed to meet the individual needs of the student and courses may be waived if the student can demonstrate the skills and knowledge the courses are designed to develop. Students may elect to extend the time period beyond the 12 month period if they prefer to progress at a slower pace or if they prefer to become qualified in both work evaluation and work adjustment.

Rehabilitation counselors employed by the Wisconsin Division of Vocational Rehabilitation may elect a sub-major in rehabilitation counseling rather than work evaluation or work adjustment.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. Applicants may be admitted on probationary status if their overall grade point average is at least 2.25 but less than 2.75. Applicants who have less than a 2.25 overall grade point average but have relevant work experience since receiving their bachelor's degree may qualify for admission by taking a full credit load of selected undergraduate courses during the summer session or regular semester and attaining a 3.0 grade point average. All applicants must present evidence that they are familiar with the practices in American industry and business. (Applicants from a foreign country may meet this requirement by presenting evidence of two years of paid work experience in American industry or business.)

Further, the applicant should possess personal characteristics necessary to work with handicapped people—personal and social maturity, a combination of patience, empathy, and understanding, and an interest in the welfare of handicapped individuals. Applicants who are experienced in work evaluation or work adjustment, handicapped or members of minority groups will be given first consideration for admission.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) a minimum grade of B or better in practicum and internship courses; (c) approval for degree candidacy at the appropriate time; and (d) a course distribution as outlined below for the specific sub-major.

WORK EVALUATION

Preparation in Research (6-10 credits)		Credits
421-740	Research Foundations	4
459-755	Problems in Vocational Rehabilitation (or)	2
459-770	Thesis in Vocational Rehabilitation	6

Preparation Basic to Sub-major (30-34 credits)		Credits
459-585	Rehabilitation of the Mentally Retarded	2
459-703	Physical Disability and Work	3
459-706	Laboratory in Work Evaluation	2
459-707	Practicum in Work Evaluation	4
459-610	Psychological Testing with Handicapped People	2
459-717	Occupational Analysis and Information	2
459-723	Procedures of Work Evaluation	3
459-724	Procedures of Work Adjustment	2
459-738	Psychological Disability and Work	2
459-761	Counseling Techniques	2
459-780	Administration in Vocational Rehabilitation	2
459-783	Internship in Work Evaluation	4-6-8

Preparation for Further Individual and Professional Development		
459-505	Sign Language I	3
459-700	Seminar in Vocational Rehabilitation	1-2
459-701	Introduction to Vocational Rehabilitation	2
459-769	Behavior Change Techniques with Handicapped People	2
459-799	Independent Studies in Vocational Rehabilitation	1-2
413-741	Individual Mental Testing	2
413-743	Advanced Individual Mental Testing	2
413-752	Group Dynamics	2
413-760	Theories and Techniques of Behavior Modification	2
459-685	Group Processes in Rehabilitation	2

WORK ADJUSTMENT

Preparation in Research (6 credits)		
421-740	Research Foundations	4
459-755	Problems in Vocational Rehabilitation	2

Preparation Basic to Sub-major (33 credits)		
459-585	Rehabilitation of the Mentally Retarded	2
459-703	Physical Disability and Work	3
459-704	Laboratory in Work Adjustment	1
459-709	Practicum in Work Adjustment	3
459-717	Occupational Analysis and Information	2
459-723	Procedures of Work Evaluation	3
459-724	Procedures of Work Adjustment	2
459-738	Psychological Disability and Work	2
459-761	Counseling Techniques	2
459-769	Behavior Change Techniques with Handicapped People	2
459-780	Administration in Vocational Rehabilitation	2
459-789	Internship in Work Adjustment	6
413-752	Group Dynamics	2
413-760	Theories and Techniques of Behavior Modification	2

Preparation for Further Individual and Professional Development		Credits
459-505	Sign Language I	3
459-700	Seminar in Vocational Rehabilitation	1-2
459-701	Introduction to Vocational Rehabilitation	2
459-799	Independent Studies in Vocational Rehabilitation	1-2
479-530	Psychology of Learning	3
479-570	Assertive Training Procedures	2
479-730	Advanced Psychology of Learning	2

EDUCATION SPECIALIST DEGREE GUIDANCE AND COUNSELING

The Education Specialist degree in Guidance and Counseling is an advanced degree requiring 36 semester credits beyond the master's degree.

The program is for people who have a master's degree in Guidance and Counseling or in one of the related helping professions. It is designed to enable the student to develop beyond the master's degree level those competencies required in the broad area of guidance, counseling, psychological services, or related helping services.

The program includes the appropriate courses needed for Life Certification for school counselors in Wisconsin (18 semester credits beyond the master's degree).

Persons eligible for the Wisconsin 30 credit Professional School Counselor Certification plan who have master's degrees in other fields are eligible for this program.

ADMISSION

Students seeking admission to the program should complete the following at least 30 days prior to the opening of the term in which they plan to begin their program.

1. File an application for admission to the Ed.S. program.
2. Submit a current vita listing all pertinent biographical and educational data.
3. Present official transcripts of all college and university work completed certifying award of bachelor's and master's degrees. Master's degree work must be in Guidance and Counseling or an equivalent field with a cumulative grade point average of at least 3.25 on a 4.0 scale in all graduate work. Transcripts need not be submitted for work completed at Stout.
4. Evidence of at least two years of successful professional experience or the equivalent is desirable and letters attesting to such experience or professional promise should be requested from two appropriate persons.

After review of the application data, the Graduate College will:

1. Assign program status and inform the student of it immediately.
   a. Full status will be granted to those who meet all admission requirements.
   b. Provisional status may be granted to those who do not fully qualify on some requirements. At the conclusion of the first term of enrollment, the status will be re-evaluated.
   c. Admission will be denied students whose qualifications do not meet the requirements and if the admissions committee decides provisional status is not warranted. The appropriateness for this program of an applicant's goals will be considered in the decision to admit or not.
2. Assign an advisor to assist in developing a degree program and registering for the first term.

DEGREE PROGRAM SUPERVISION

For the first enrollment, the program advisor will aid the student in developing a class schedule in keeping with degree requirements. Prior to enrolling for a second term, the Graduate College will appoint a supervisory committee consisting of the program advisor and two other members of the graduate faculty. This committee will help the student prepare a total program plan in keeping with the degree requirements and the student's special needs. This plan must be completed before enrollment for a second term. The committee will also approve and supervise the student's field study, administer a comprehensive examination and recommend the awarding of the degree.

REQUIREMENTS FOR THE ED.S. DEGREE

Prior to the award of the Ed.S. degree, the following requirements will be met.

1. Completion of an approved degree program with an overall grade point average of at least 3.25.
2. Filing of an "Intent to Graduate" at least seven weeks prior to the expected graduation date.
3. Completion of a comprehensive examination, written and oral, at least three weeks prior to graduation.
4. Filing of an approved field study report and abstract at least one week prior to graduation.
5. Recommendation for the degree by the supervisory committee.

TRANSFER OF CREDIT

A maximum of 15 semester hours of graduate credit may be transferred to meet the requirements of the Ed.S. degree. It must be appropriate to the degree program and awarded by an institution accredited for graduate level work. All credit to be counted towards the degree must have been completed within seven

years of the date the degree is awarded. Credits earned through Stout's Continuing Education program are considered transfer credit for this purpose.

RESIDENCE REQUIREMENTS

Candidates for the Ed.S. degree must be full-time on-campus students for at least two consecutive summer sessions (minimum of six credits per summer) or one semester (minimum of 12 credits).

TIME LIMITS

All degree requirements, including transferred credit, must be completed within a seven-year period.

CURRICULUM

Content for the advanced degree program will be drawn from three bodies of knowledge: foundations, research, and professional study. Selection of these three components is based on the assumption that the holder of an advanced degree should be a practicing professional, capable of solving problems through applied research techniques, and a scholar in his profession.

The three components are shown below with a listing of the required courses for the program. The 700 level numbered courses are open to all graduate students. The 800 level numbered courses are intended primarily for post-master's degree work.

PROGRAM PLAN

To qualify for the degree of Education Specialist, the student must earn not less than 36 semester credits beyond the master's degree which will be distributed as follows: selectives will be planned with the program advisor and supervisory committee to insure the most appropriate program for each student.

	Credits
Foundations (9-10 Cr.)	
387-710 Sociological Foundations of Guidance	3
Selectives	6-7
Research and Evaluation (3-6 Cr.)	
421-816 Instrumentation	3
421-742 Program Evaluation	3
Professional (20-24 Cr.)	
413-800 Field Study	6
Selectives	14-18

EDUCATION SPECIALIST DEGREE INDUSTRIAL AND VOCATIONAL EDUCATION

This is a 36 semester credit program beyond the master's degree. Two concentrations are available leading to an Education Specialist degree in Industrial and Vocational Education. (1) Industry and Technology, and (2) Professional Education.

The program is for those who have a master's degree in industrial arts, industrial education, vocational education or equivalent. (Equivalency meaning agriculture, business education, distributive education, home economics education, and trade and industrial education.)

Or, the program is for those who have a master's degree and are a certified employee of a vocational-technical institute or a community college.

ADMISSION

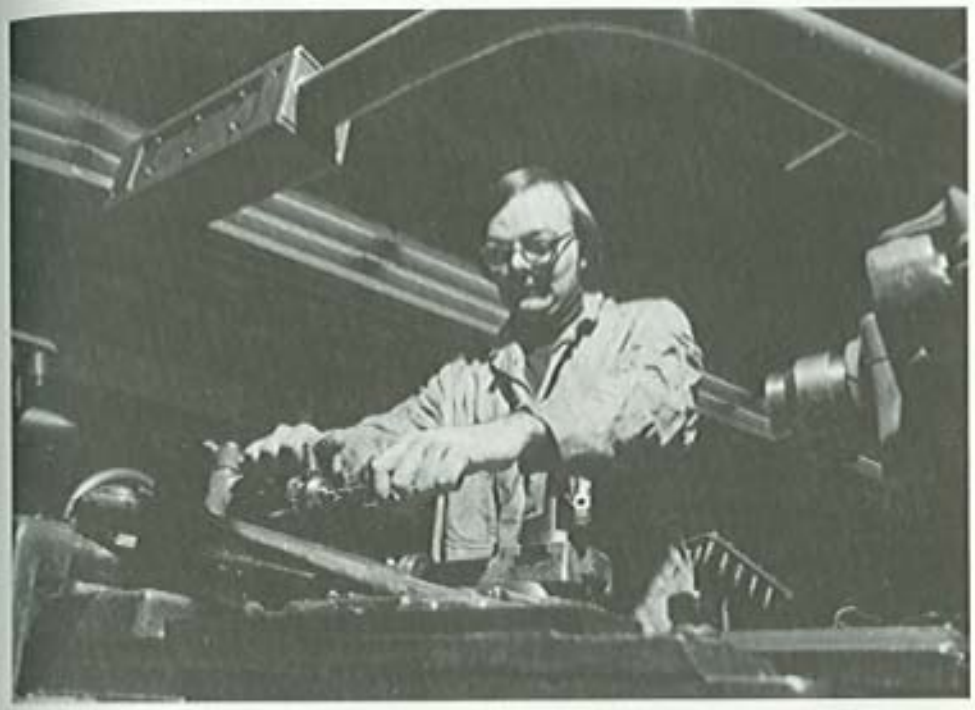
Students seeking admission to the program should complete the following at least 30 days prior to the opening of the term in which they plan to begin their program.

1. File an Application for Admission to the Ed.S. program.
2. Submit a current dossier (resume') listing all pertinent biographical and educational data.
3. Present official transcripts of all college and university work completed certifying award of bachelor's and master's degrees in industrial education, industrial arts education, vocational education or an equivalent field with a cumulative grade point average of at least 3.25 on a four-point scale in all graduate work. Persons having master's degrees in other fields who are certified and employed in vocational-technical education are also eligible for admission. Transcripts need not be submitted for work completed at Stout.
4. Provide evidence of at least two years of successful teaching experience and professional promise by requesting letters from at least two administrators or supervisors.

The Education Specialist degree program committee comprised of graduate faculty and an Education Specialist degree student will review the candidate's credentials and make a recommendation relative to admission to the director of the Education Specialist degree program. The committee may recommend that certain standardized examinations be completed or that the candidate be interviewed by the committee. The director of the major will recommend admission with full or provisional status to the Graduate College.

After review of the application data, the Graduate College will:

1. Assign program status and inform the student of it immediately.



a. **Full status** will be granted to those who meet all admission requirements.
b. **Provisional status** may be granted to those who do not fully qualify on some requirements. At the conclusion of the first term of enrollment, the status will be reevaluated.
c. Admission will be **denied** students whose qualifications do not meet the requirements and if the admissions committee decides provisional status is not warranted.

2. Assign an advisor to assist in developing a degree program and registering for the first term.

DEGREE PROGRAM SUPERVISION

For the first enrollment, the student's program advisor will aid in developing a class schedule in keeping with degree requirements. Prior to enrolling for a second term, the student will prepare a total program plan in keeping with degree requirements and the student's special needs.

At that time, the Graduate College will appoint a supervisory committee consisting of the program advisor and two other members of the graduate faculty.

The committee will act on the appropriateness of the student's degree program, approve the proposed field study, administer the oral comprehensive examination and recommend the award of the degree.

TEACHING EXPERIENCE

This program is designed for people in education. It is felt that course work will be more significant for those who have some experience in teaching. Thus, no more than eight credits in the degree program may be completed prior to satisfying the requirement of two years of successful teaching experience.

REQUIREMENTS FOR THE ED.S. DEGREE

Prior to the award of the Ed.S. degree, the following requirements will be met:

1. Completion of an approved degree program of 36 semester credits with an overall grade point average of at least 3.25.
2. Filing of an "Intent to Graduate" at least seven weeks prior to the expected graduation date.
3. Completion of a comprehensive examination, written and oral, at least three weeks prior to graduation.
4. Filing of an approved field study report and abstract at least one week prior to graduation.
5. Recommendation for the degree by the supervisory committee.

TRANSFER OF CREDIT

A maximum of 18 semester hours of graduate credit may be transferred to meet the requirements of the Ed.S. degree. It must be appropriate to the degree program and awarded by an institution accredited for graduate level work. All credit to be counted toward the degree must have been completed within seven years of the date the degree is awarded. Credits earned through Stout's Continuing Education office are considered transfer credit for this purpose.

RESIDENCE REQUIREMENTS

Candidates for the Ed.S. degree must be full-time on-campus students for at least two consecutive summer sessions (minimum of six credits per summer) or one semester (minimum of 12 credits).

TIME LIMITS

All degree requirements, including transferred credit, must be completed within a seven-year period.

CONCENTRATIONS WITHIN PROGRAM

Two concentrations are available within the Ed.S. degree program, they are: (1) Industry and Technology, and (2) Professional Education.

INDUSTRY AND TECHNOLOGY CONCENTRATION

The Education Specialist degree program in Industrial and Vocational Education—Industry and Technology Concentration at Stout is designed for the graduate student desiring a broad educational experience leading to a professional career as a teacher of industrial and technical subjects in high schools, vocational schools, technical institutes, junior colleges, and universities.

Content for the advanced degree program will be drawn from three bodies of knowledge: (a) industry and technology, (b) applied research, and (c) professional education. Selection of these three components is based on the assumption that the holder of an advanced degree in industrial education should be a scholar in the discipline (industry and technology), capable of solution of problems through applied research techniques (researcher), and a practicing educator.

CURRICULUM

The Ed.S. degree with a concentration in Industry and Technology consists of three groups of courses and/or experiences as follows: industry and technology, applied research, and professional education.

The industry and technology component consists of courses basic to the science of industry and technology and a field study. This component is intended to be flexible in order to afford candidates an opportunity to broaden themselves if their prior work has been narrow or to study in depth a particular conceptual area of industry and technology if their prior work has been broad in nature. In this component the advanced graduate student will have the opportunity to take additional physics, chemistry, mathematics, sociology, psychology and course work to develop a level of competence in one or two conceptual areas in their substantive teaching field. The Impacts of Industry and Technology, a course required of all students in the program, permits the students to look at how their teaching area has had an effect on people and society. The culminating activity is a field study which is six semester credits of the 18 semester credits required in this component.

The main purpose of the field study is to provide students with an opportunity to apply and synthesize the contents of their program. Education Specialists are encouraged to select practical problems related to their professional appointment, or if not presently employed, to select a problem from their discipline.

The applied research component consists of course work in computer science, research design and procedures, and statistics. A holder of an advanced degree should have an intimate knowledge of research design, measurement and statistics, and a broad background in the problems associated with industrial and vocational education.

The professional education component consists of courses in the foundational areas of education and curriculum and instruction. There is a growing body of knowledge and research dealing with education and the instructional process. It is imperative that the Education Specialist be able to implement current innovative educational practices and thought into the curriculum and the teaching process.

The three components are shown below as they appear in the curriculum requirements for the degree.

PROGRAM PLAN

To qualify for the degree of Education Specialist with a concentration in Industry and Technology requires that the student earn not less than 36 semester credits beyond the master's degree which will be distributed as follows:

		Sem., Hrs.	Total Sem. Hrs.
Industry and Technology			16-20
Required:			
190-733	Impacts of Technology	2	
190-890	Field Study in Industry and Technology	6	
Selectives		8-12	
Applied Research			6-10
Required:			
354-741	Computer Programming Techniques	2	
421-816	Instrumentation for Research	3	
Selectives		0-4	
Professional Education			6-10
Required:			
479-850	Psychology of Development	3	
421-811	Structuring Knowledge	2	
Selectives		1-5	

PROFESSIONAL EDUCATION CONCENTRATION

This concentration of the Education Specialist degree in Industrial and Vocational Education has been designed to further the individual who is committed to additional depth in preparation as a professional educator in the areas of curriculum and instruction and the supervision of instruction.

Content for the advanced degree program will be drawn from three bodies of knowledge: (a) professional education, (b) applied research, and (c) industry and technology. Selection of these three components is based on the assumption that the holder of an advanced degree should be a practicing educator, capable of solving problems through applied research techniques, and a scholar within a discipline.

CURRICULUM

The curriculum consists of three groups of courses and/or experiences as follows: professional education (curriculum and instruction and the supervision of instruction), applied research, and industry and technology.

The professional education component has two sub-components: curriculum and instruction and the supervision of instruction.

Curriculum and instruction involves the advanced graduate student in curriculum engineering, instructional systems, instructional strategies, structuring knowledge, principles of learning, guidance of learning activities, identification and determination of instructional content, and computer assisted instruction as related to Industrial and Vocational Education.

Supervision of instruction involves policy developments, program planning budget systems, cost analysis, cost effectiveness, program evaluation review techniques, accountability in education, decision making models, evaluation systems, improvement of instruction, financial aspects, coordination, leadership procedures, economics in education, management information systems, and management techniques as related to Industrial and Vocational Education. The culminating activity is a field study which is six semester credits of the total (16-20 credits) in this component. The field study provides the opportunity to put

into practice some aspect of the program that will benefit both the student and the institutional setting where the student is employed or aspires to be employed.

The applied research component consists of course work in management information systems, instrumentation for research and manpower research and planning. A holder of an advanced degree should have knowledge of research design, measurement and statistics and an understanding of problems associated with industrial and vocational education.

The industry and technology component consists of courses in the sciences basic to industry and technology (math, computer science, sociology, psychology, communication, and economics) and the impacts of technology on society. The three components are shown below with a listing of the required courses for the program.

PROGRAM PLAN

To qualify for the degree of Education Specialist Professional Education Concentration, requires that the student earn not less than 36 semester credits beyond the master's degree which will be distributed as follows:

		Sem. Hrs.	Total Sem. Hrs.
Professional Education			16-20
Required:			
421-890	Field Study in Professional Education	6	
421-811	Structuring Knowledge	2	
Selectives		8-12	
Applied Research			6-10
Required:			
421-816	Instrumentation for Research	3	
Selectives		3-7	
Industry and Technology			6-10
Required:			
190-733	Impacts of Technology	2	
479-850	Psychology of Development	3	
Selectives		1-5	

PREPARATION FOR FURTHER INDEPENDENT AND PROFESSIONAL DEVELOPMENT

The student should confer with the program advisor (chairman of supervisory committee) in choosing elective credits to complete the 36 hour degree requirement. There is considerable flexibility in the program with regard to electives, and they may be taken as needed to fulfill the individual goals and objectives of the student. Generally electives may be chosen from the following:

I. INDUSTRY AND TECHNOLOGY

A. Sciences Basic to Industry and Technology

1. Transdisciplinary

300-720	Current Human Problems	2

2. Chemistry

311-541	Chemistry of Materials	3

3. Economics

320-610	Contemporary American Economic Problems	3
320-615	Contemporary International Economic Problems	3
320-720	Labor and Industrial Relations	2

4. Physics

372-XX	Physics Elective	3

5. Sociology

387-525	Sociology of Leisure	3
387-540	Sociology of Work	3
387-560	Sociology of Juvenile Delinquency	3
387-575	Sociology of Minority Groups	3

6. Speech

391-508	Speech Skills for Business and Industry	2
391-512	Speech Skills for Educators	2

7. Psychology

479-850	Psychology of Development	3

B. Science of Industry and Technology

1. Energy and Transportation

110-614	Transmission and Drive Trains	2
110-650	Electronic Control Systems	3
110-653	Communication Systems I	3
110-656	Pulse and Switching Circuit Analysis	3
110-660	Fluid Power Systems Design	3
110-702	Recent Developments in Power Technology	2
110-798	Problems in Industry and Technology—Energy and Transportation	2-6

2. Graphic Communications

130-557	Color Separation	2
130-629	Land Use Planning	3
130-636	Computer Assisted Design Problems	2
130-716	Seminar in Industrial Graphics	2
130-717	Theoretical Foundations for Technical Drawing	3
130-718	Recent Developments in Industrial Graphics	3
130-798	Problems in Industry and Technology	2-6

3. Industrial Management

150-500	Engineering Economy	3
150-650	Introduction to Operations Research	3

4. Materials and Processes

170-501	Technology—Resources—Environment	2
170-502	Solid Waste Technology	2
170-515	Metallurgy	8
170-506	Maintenance of Processing Equipment	3
170-510	Industrial Materials	4
170-535	Tool and Die Making	2
170-550	Plastics II	2
170-637	Numerical Control II, Programming for Continuous Path Controls	3
170-713	Wood Properties I: Structure and Characteristics	3
170-715	Plastics Materials and Processes	3
170-798	Problems in Industry and Technology—Materials and Processes	2-6

5. Industrial Teacher Education

190-739	Introduction to Problems of Industry and Technology	1
190-890	Field Study in Industry and Technology	6

C. Impacts of Industry and Technology

190-733	Impacts of Technology	2

II. APPLIED RESEARCH

A. Research Design and Procedures

421-733	Survey Procedures	2
421-841	Basic Research Design	3
421-816	Instrumentation for Research	3
421-742	Program Evaluation	2

B. Computer Science

354-640	Computer Use in Education	3
354-741	Computer Programming Techniques	3

C. Statistics

421-761	Educational Statistics	2
421-862	Inferential Statistics	3
421-863	Sampling Techniques	3

III. PROFESSIONAL EDUCATION

A. Foundations

421-505	History of Education	2
421-700	Philosophy of Modern Education	2
421-705	Social Thought of American Educators	2
479-730	Advanced Psychology of Learning	2

B. Curriculum and Instruction

1. Audio-Visual

600-732	Planning Media Facilities	2

600-740	Instructional Development	2
600-715	Media Selection	2
600-730	Media Retrieval Systems	2

2. Guidance

413-691	Theories of Career Development	2
413-736	American College Student	2
413-737	Curriculum and Methods in Career Education	2
413-750	Appraising the Individual	2
413-752	Group Dynamics	2
413-890	Multiple Counseling and Sensitivity Training	2

3. Education

421-890	Field Study in Professional Education	6
421-714	Teaching Strategies	4
421-750	Curriculum Theory and Practice	2
421-799	Independent Study	2
421-811	Structuring Knowledge	2
421-681	American Higher Education	2

4. Industrial Teacher Education

190-708	Issues in Industrial Education	2
190-710	Curricular Innovations Affecting Industrial Education	2
190-638	Course Construction	2

5. Vocational Education

469-534	Task Analysis	2
469-560	Cooperative Occupational Education Programs	2
469-608	Issues in Vocational, Technical and Adult Education	2
469-674	Adult Education	2
469-710	Coordination	2
469-746	Seminar in Vocational Education	2
469-773	Problems in Coordination	2
469-799	Independent Study	2
469-780	Internship Vocational Education	4-8

6. Vocational Rehabilitation

459-717	Occupational Analysis and Information	2

C. Supervision and Administration

1. Education

150-600	Organizational Leadership	3
150-713	Introduction to Educational Systems Analysis	3
150-740	Introduction to Decision Theory	3

150-750	Organizational Development	3
421-890	Field Study in Professional Education	6
479-579	Public Relations	2
479-779	Advanced Public Relations	2
421-702	Principles of Supervision	2
421-726	Administration	2
421-727	Supervision of Student Teachers	2
421-742	Program Evaluation	2
413-749	Organization and Administration of Student Personnel Services	2
320-770	Economics in Education	4
421-830	Educational Administrative Behavior	3
600-740	Instructional Development	2
600-760	Educational Media Administration	2
2. Vocational Education		
469-710	Coordination	2
469-792	Administration of Vocational, Technical and Adult Education	2
469-784	Internship - Local Vocational Education Coordinator (LVEC)	4-8
469-780	Internship Vocational Education	4-8

COURSE DESCRIPTIONS

COURSE NUMBERING SYSTEM

Stout uses a six digit numbering system. The first three digits designate the school and department offering the course. The fourth digit indicates the level of the course. While 500-699 courses may carry graduate credit, such credit is generally awarded **only** to students in graduate degree programs with the approval of their advisor. 700-899 courses may be taken for graduate credit only. 800-899 courses are generally for Ed.S. program students.

INDUSTRY AND TECHNOLOGY (1)

100 Interdepartmental
110 Energy and Transportation
130 Graphic Communications
150 & 160 Business and Industrial Management
170 Materials and Processes
190 Industrial Teacher Education

HOME ECONOMICS (2)

200 Interdepartmental
212 Human Development, Family Living and Community Educational Services
214 Apparel, Textiles and Design
229 Food Services and Nutrition
242 Human Development, Family Living and Community Educational Services
245 Habitational Resources

LIBERAL STUDIES (3)

303 Anthropology
304 Art
308 Biology
311 Chemistry
320 Economics
326 English-Journalism
328 French
335 Geography
338 History
354 Applied Mathematics
355 Mathematics
360 Music
365 Philosophy
366 Physical Education
367 Physical Education
372 Physics
375 Political Science
387 Sociology and Social Work
391 Speech

EDUCATION (4)

405 Art Education
413 Counseling and Personnel Services
416 Distributive Education
421 Education
431 Special Education
459 Vocational Rehabilitation and Manpower Services
469 Vocational Education
479 Psychology
489 School Psychology

ACADEMIC AFFAIRS (5)

MEDIA TECHNOLOGY (6)

COURSE SCHEDULING

A letter system has been developed to help students plan course schedules. Letters following course descriptions indicate when a course is usually offered. F-Fall Semester. W-Winter Semester. S-Summer Session. Courses not lettered follow no usual pattern. The system does not guarantee that a course will be offered during a particular semester.

INDUSTRY AND TECHNOLOGY

100-590 TECHNICAL SERVICE SCHOOLS. 1-6 Cr. Many manufacturers offer special purpose technical courses. Some of them are suitable for college credit. The following guidelines are used to award such credit: (1) the student makes all the arrangements with the manufacturer offering the course, (2) credit is awarded on the basis of one credit for each full week (40 clock hours) of attendance, (3) students must be enrolled and pay fees at the university prior to taking the course, (4) approval by the dean of the School of Industry and Technology will be necessary prior to enrollment for credit, (5) Graduate College approval will be necessary for graduate students taking this course for graduate credit.

110-517 APPLIED INTEGRATED CIRCUITS. 3 Cr. Application of integrated circuits in analogdigital systems including analog measurement, data conversion and an introduction to microprocessors. Prerequisite: 10 Cr. in physics and/or electronics. W

110-522 EMISSION CONTROL. 1 Cr. Domestic and foreign automotive emissions, their causes, the methods used to control them, and related diagnosis procedures are studied. F-W

110-523 SERVICE MANAGEMENT. 2 Cr. Instruction and experiences in auto service management, planning and layout of service facilities, selection of tools and equipment and the development of curriculum and/or work schedule. W

100-575 ALCOHOL, DRUGS AND ACCIDENT PREVENTION. 2-3 Cr. The role of alcohol and drugs and their relationships to accident prevention programs will be examined. The problem of alcoholism and drug addiction and present efforts for rehabilitation will be explored. Educational programs dealing with the physiological, psychological, and sociological effects of alcohol and drugs will be discussed. F-S

110-575 BEHAVIORAL APPROACH TO ACCIDENT PREVENTION. 2-3 Cr. The philosophical and theoretical basis of accident prevention efforts will be explored. The behavioral task is analyzed from the physiological, medical and physical, psychological, sociological, and culture perspective. The course will also include a critical analysis of principles and methods appropriate in identifying, understanding and modifying unsatisfactory attitudes and behavior. W-S

110-577 DRIVER IMPROVEMENT PROGRAMS. 2 Cr. The improvement of drivers through educational methodology, curriculum planning, and research. Special attention given to adult programs, mentally retarded, orthopedically handicapped, as well as the chronic violator and the accident repeater. Prerequisite: Six semester hours of course work in Safety Studies.

110-578 TRAFFIC AND HIGHWAY SAFETY PROGRAMS. 3 Cr. An overview of the traffic and highway safety problems; components; research agencies; national, state and local policies; standards and recommendations for improved traffic safety. Prerequisite: 110-271 or permission of instructor.

110-581 PRINCIPLES OF OCCUPATIONAL SAFETY. 3 Cr. An overview of occupational accident prevention programs. Emphasis on techniques of measurement, cost of accidents, locating and identifying accident sources, psychology of occupational safety and problems of selecting corrective action. F-W

110-583 VOLUNTARY OSHA COMPLIANCE. 2-3 Cr. This course will consist of an in-depth investigation of the Federal Occupational Safety and Health Act of 1970 and its implications towards industry's voluntary compliance with the federal regulations enforced by the Occupational Safety and Health Administration. Other areas will include Federal/State OSHA programs and their impact on industrial operations, and will provide guidelines for systematic self-inspection and compliance procedures. F-S

110-584 OSHA FEDERAL STANDARDS AND REGULATIONS. 2 Cr. This course will consist of an in-depth investigation of the Federal Standards and Regulations enforced by the Occupational Safety and Health Administration. In addition, the American National Standards Institute's Standards will be reviewed along with the National Fire Protection Association's work place standards. W

110-585 CONTEMPORARY PROBLEMS IN OCCUPATIONAL SAFETY. 3 Cr. This course will provide an in-depth view of the various specialized administrative and operational problems encountered by the part-time safety specialist or the safety professional. In addition, it will expose the student of occupational safety to the broad scope of functions and tasks that confront the career safety man. F

110-586 FIRE PROTECTION/PREVENTION. 3 Cr. Behavior of fire, including chemistry, protection, prevention and control. W

110-587 HUMAN FACTORS ENGINEERING. 3 Cr. A survey of the areas of man-machine interface. The physiological and psychological abilities and senses of man will be examined, together with technological advances in the interface areas of control, working performance, reliability, comfort, and safety. (The emphasis will be on effective design of man and work environment as a cybernetic system.) Prerequisites: 479-110, 354-130 or consent of instructor. F

110-588 CONSTRUCTION SAFETY. 2 Cr. Analysis of hazards, control procedures and systems related to typical construction equipment, tools and materials safety problems. W

110-614 TRANSMISSION AND DRIVE TRAINS. 2 Cr. Power transmission through gears, clutches and drives common to the automobiles. Fluid couplings, gear sets, differentials, transmissions and drive lines. Prerequisite: 110-314. W

110-615 ENGINE MACHINING AND REBUILDING. 3 Cr. The rebuilding of four-stroke cycle engines including all necessary precision machining. Special emphasis given to cylinders, blocks, valve trains, and reciprocating parts. F-W

110-622 AUTOMOTIVE PRACTICUM. 2 Cr. Experiences in trouble shooting and servicing all automobile functions as typically done in an auto service facility. F

110-625 AUTO SHOP MAINTENANCE AND MANAGEMENT. 3 Cr. Maintenance and management of equipment and personnel peculiar to the auto shop.

110-630 AEROSPACE. 3 Cr. Classroom, field and optional flight experiences for educators who wish a better understanding of today's aviation or aerospace industries, details of space exploration, federal licensing regulations, air traffic control, and related career guidance information.

110-631 PRIVATE PILOT'S GROUND SCHOOL. 3 Cr. Prepares the beginning flight student for an F.A.A. Private Pilot's Certificate through the study of airplane utility, flight manuals, safety, federal aviation regulations, navigation, communication, weather, general operation of aircraft and flight theory.

110-635 INTRODUCTION TO FLIGHT. 2 Cr. Development of skills and knowledge of flying a single engine aircraft. Instruction includes applied flight theory, dual flight instruction and solo flight. Prerequisite: 110-631.

110-650 ELECTRONIC CONTROL SYSTEMS. 3 Cr. General electronic control systems, sensing devices, control devices, sequence control, basic feedback control principles, analog computation and control, and numerical controls. Laboratory work is required. Prerequisite: 110-345. W

110-653 COMMUNICATION SYSTEMS I. 3 Cr. An analytical study of communication transmission and receiving systems, the circuits and design techniques of systems, signal transmission systems, signal receiving systems, and applied techniques. Laboratory work is required. Prerequisites: 110-345, 110-353. W

110-656 PULSE AND SWITCHING CIRCUIT ANALYSIS. 3 Cr. An analytical study of electronic circuit design, philosophy of circuit design, general design procedures, C.C. and low frequency design, high frequency design, digital circuit design, switching circuit design, power supply, analog computer design, and circuit evaluation techniques. Laboratory work is required. Prerequisites: 110-256, 110-345. F

110-660 FLUID POWER SYSTEMS DESIGN. 3 Cr. Introduction to fluid power systems design through problem solving in areas of load analysis, circuit control, and component selection. Prerequisites: 110-260, 110-360, 110-361, 110-363, and 110-362. F

110-695 AUTOMOTIVE SERVICE EXPERIENCE. 2 Cr. Off-campus experience where student will work in a garage or dealership for the purpose of acquiring the knowledge and skills of automotive servicing beyond what the classroom-laboratory provides. W

110-702 RECENT DEVELOPMENTS IN POWER TECHNOLOGY. 2 Cr. Study of recent changes in the field of power of technology design to provide the teacher with competencies related to these changes with respect to his needs as a teacher. Prerequisite: Minimum of four semester hours of credit in power or consent of chairman of Power Technology Department.

110-770 THESIS - SAFETY. 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, complication of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. W-S

110-771 FOUNDATIONS IN SAFETY. 3 Cr. Overview and interface of safety legislation, standards, and philosophies. Agency responsibilities and control. Comparative analysis of accident causation theories and models. Hazard countermeasures for home, school, traffic, recreation and occupational areas. F-S

110-782 OCCUPATIONAL SAFETY PROGRAMMING. 3 Cr. An in-depth study and application of current administrative, organizational, and supervisory practices, which are specifically and uniquely related to managing industrial or occupational accident prevention and loss control programs. F-W

110-783 FIELD PROBLEM IN ACCIDENT PREVENTION/LOSS CONTROL. 3 Cr. An operational experience which requires identification of a technical and/or administrative problem in an occupational setting. The problem is researched, analyzed for alternative operational counter-measures, and field tested to determine the effectiveness of the solution. W

110-784 OCCUPATIONAL SAFETY INTERNSHIP. 1-6 Cr. Full-time, supervised work and learning experience in an appropriate professional setting. S

110-785 OCCUPATIONAL SAFETY AND HEALTH SEMINAR. 2 Cr. Current topics, trends and methods in loss control will be examined, discussed and evaluated. W

110-798 PROBLEMS IN INDUSTRY AND TECHNOLOGY-ENERGY AND TRANSPORATION: Automotive, Aviation, Electronics, Fluid Power, Energy, Safety. 2-6 Cr. Substantive study and activity for specialists in the Energy-Transportation field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in Power Technology. Preparation of a technical report may be repeated for a maximum of six semester credits. Prerequisite: 190-739 and consent of department chairman. S

130-513 TECHNICAL RENDERING. 2 Cr. The graphic representation of technical information regarding buildings, products, sales literature, and technical manuals which relates to a professional or public audience by utilizing various rendering techniques, media, and image generation processes. W

130-526 BUILDING CONSTRUCTION SPECIFICATIONS. 2 Cr. Principles of construction, specification, organization, and the development of basic skills of specification preparation. Demonstration of the role of specifications within the building process and the relationship of the specifications to other construction contract documents. F-W

130-527 TOPOGRAPHY. 2 Cr. Calculate and convert previously compiled field work data into usable language for maps, profiles, and land descriptions. Prerequisites: 130-110 and trigonometry. F-S

130-528 STRUCTURAL DESIGN. 3 Cr. Analysis, selection, and delineation of concrete, steel, and wood structural components and systems in buildings. Prerequisite: 372-325. F

130-532 MECHANICAL DESIGN. 4 Cr. A study of the design process. Analysis and design of machine elements including gearing, bearings, shafting, and friction devices. Prerequisites: 130-230 or 130-593, 372-325 or 130-291, and 355-153 or 355-156. W

130-537 MECHANICAL DESIGN DRAFTING. 2 Cr. Design of a machine including: specifications, layout, calculations, bills of material, detail and assembly drawings. Prerequisite: 130-311. F

130-543 GRAPHIC ARTS PRODUCTION TECHNIQUES. 2 Cr. The study of production techniques associated with two dimensional printed media including client/customer and printer relationships with emphasis on design, production, and evaluation. May be retaken for up to six credits. Prerequisite: 130-140 and 130-365 or consent of instructor. F-W-S

130-557 COLOR SEPARATION. 2 Cr. Study of the nature of color and light. Color separation from reflected and transmission copy. Theory of filters, densitometry, and their relation to color separation. Direct and indirect photographic color separation methods. Prerequisite: 130-355 or consent of instructor. W

130-592 MECHANICS OF MACHINERY I. 3 Cr. The study of dynamics as applied to machinery including: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power, and energy; balancing and vibration. Prerequisite: 130-290, 355-154. W

130-593 MECHANICS OF MACHINERY II. 3 Cr. Graphical and analytical analysis and synthesis of linkages, cams, and gear trains, including displacement, velocity, acceleration, and dynamic forces. Prerequisite: 130-592. F

130-629 LAND USE PLANNING. 3 Cr. Area planning; problems oriented toward design solutions of building complexes; exterior space, land use, relationships between buildings and supporting facilities. Survey of contemporary regional and city planning and its historical roots. Prerequisite: 130-325. F-W

130-636 COMPUTER ASSISTED DESIGN PROBLEMS. 2 Cr. An introduction to the relationship of the computer to drafting and plotted design, design automation, introduction to mechanical design problem analysis for computers, mathematical and simulation models for use in the solution of mechanical design problems. Prerequisites: 354-141, 130-230. W

130-716 SEMINAR IN INDUSTRIAL GRAPHICS. 2 Cr. Review of commercial practices in industrial graphics, including: drafting departments, design, standards, documentation, dimensioning, symbology, equipment, media and automated processes. Prerequisite: Consent of head of Industrial Graphics Department.

130-717 THEORETICAL FOUNDATIONS FOR TECHNICAL DRAWING. 3 Cr. A study of various concepts

for accurately representing three-dimensional spatial relations on a two-dimensional surface. Prerequisite: Ten credits in Industrial Graphics field or consent of department chairman.

130-718 RECENT DEVELOPMENTS IN INDUSTRIAL GRAPHICS. 3 Cr. The implementation of teaching currently accepted drafting theories and concepts as practiced by modern industry. New developments in materials and hardware and their utilization within the curriculum. Prerequisite: Ten credits in Industrial Graphics field or consent of department chairman. S

130-798 PROBLEMS IN INDUSTRY AND TECHNOLOGY. 2-6 Cr. Substantive study and activity for specialists in the graphics arts field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in graphic arts. Preparation of a technical report may be repeated for up to six credits. Prerequisites: 190-739 and consent of department chairman. F-W-S

150-500 ENGINEERING ECONOMY. 3 Cr. Analysis of the source and application of funds, including cost control, valuation, depreciation, replacement theory, and taxation. F-W-S

150-501 SEMINAR: (TITLE WILL REFLECT SPECIFIC BUSINESS OR MANAGEMENT CONTENT) 1 or 2 Cr. Current topics in business and industrial management to meet the specific needs of the students enrolled.

150-505 PRODUCTION AND INVENTORY CONTROL. 3 Cr. Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling material, parts, subassemblies, and final assemblies of a manufacturing system. Prerequisites: 150-200, 354-130, and 354-530. F-W

150-510 PRODUCTION PROCESSING. 3 Cr. Production processes with special consideration to product design as related to economic production. Emphasis on factors which influence the choice and sequence of process to obtain an end product. Prerequisite: 150-200. F-W

150-520 QUALITY ASSURANCE. 3 Cr. Practical and statistical quality control in the design and use of quality assurance programs consisting of quality engineering; manufacturing quality assurance; and product quality assurance programs. Prerequisites: 150-200, 354-130, and 354-530. F-W

150-540 TIME AND MOTION STUDY. 3 Cr. Introduction to methods engineering in business and industry including improving methods of performing and measuring work done by individuals or groups through motion analysis, charting techniques, and principles of motion economy. Prerequisite: 150-200 or 245-300. F-W-S

150-570 ESTIMATING AND ANALYZING CONSTRUCTION COSTS. 3 Cr. This course involves the process of estimating and analyzing material, manhours, equipment, methods of construction, overhead, and profit and submitting these factors in the form of a bid. Prerequisite: junior or senior standing. F-W

150-600 ORGANIZATIONAL LEADERSHIP. 3 Cr. An overview of the supervisor's role in accomplishing organizational objectives through the management of human resources. Concepts of organizational and individual behavior serve as a foundation for the development of such supervisory skills as communication, motivation, initiating change, discipline, delegation, and handling grievances. F-W-S

150-605 PRODUCTION AND INVENTORY CONTROL PRACTICUM. 2 Cr. Practical application of principles and techniques learned in 150-505 Production and Inventory Control as part of the Professional Semester-Manufacturing Laboratory. Prerequisite: 150-505.

150-620 QUALITY ASSURANCE PRACTICUM. 2 Cr. Application of principles and techniques learned in 150-520 Quality Assurance as part of the Professional Semester-Manufacturing Laboratory. Prerequisite: 150-520.

150-640 TIME AND MOTION STUDY PRACTICUM. 2 Cr. Application of principles and techniques learned in 150-540 Time and Motion Study as part of the Professional Semester in the Manufacturing Laboratory. Prerequisite: 150-540. F-W

150-650 INTRODUCTION TO OPERATIONS RESEARCH. 3 Cr. Business and industrial application of operations research techniques using linear programming, decision models, and Monte Carlo methods. Problem applications in allocation, sequencing, waiting lines, and competitive strategies. Prerequisite: 150-200. W

150-660 INDUSTRIAL MANAGEMENT. 2 Cr. Principles and methods of analyzing and solving industrial problems. Application through case studies, management games, and special problems.

150-670 SYSTEMS APPROACH TO CONSTRUCTION MANAGEMENT. 3 Cr. The total concept of the construction industry including the contracting, financing, bidding, planning, organizing, coordinating, and controlling functions and techniques. F-W

150-680 PRODUCTION MANAGEMENT PRACTICUM. 2 Cr. Principles and methods of analyzing and solving production management problems. Application of prior course work to manufacturing project in the manufacturing laboratory. Prerequisite: Permission of instructor. F-W

150-700 SYSTEMS ANALYSIS AND DESIGN. 3 Cr. A survey of design approaches to industrial research. Application of appropriate research tools to analyze and design jobs, organization, operating systems and product/market studies. F

150-710 SEMINAR IN INDUSTRIAL OPERATION. 3 Cr. Discussion of current, theory and practice of operation of engineering, marketing, manufacturing, financial administration and industrial relations aspects of industry. These integrated systems will be analyzed, based upon the management of objectives concept. F

150-713 INTRODUCTION TO EDUCATIONAL SYSTEMS ANALYSIS. 3 Cr. Application of quantitative methodology to the selection of educational problems.

150-720 FOUNDATIONS IN INDUSTRIAL OPERATIONS. 2 Cr. This course is designed to improve the student's competencies in all aspects of Industrial Technology. A major professor will be identified who will serve as a tutor in guiding the students' self-development program. There will be a culminating matriculation to candidacy examination to assure minimum proficiency standards. F-W-S

150-730 ADVANCED TECHNICAL PROBLEMS - INDUSTRIAL MANAGEMENT. 2-6 Cr. Advanced study in industrial management, management control, product development or process and facility planning. Recent developments, advanced technical work, experimental work, and technical reports. A specific problem area for study in this course must be identified by the student prior to registering for this course. F-W-S

150-740 INTRODUCTION TO DECISION THEORY. 3 Cr. Application of quantitative methodology to the solution of industrial problems. W

150-750 ORGANIZATIONAL DEVELOPMENT. 3 Cr. Change agent skills for middle managers and external consultants to facilitate organizational health. Assessment, diagnosis, intervention, team building, and coaching of key organization personnel. Emphasis on practical methods for the development of various types of organizations. Prerequisite: 150-600.

150-790 SYNERGISTIC EXPERIENCE: ADVANCED MANUFACTURING SYSTEM. 3 Cr. A capstone experience to integrate and synthesize previous learnings within the context of an industrial environment.The total integrated systems approach will be applied to an industrial project. This may be either research in a simulated multi-factor industrial situation or an internship assignment. Prerequisites: 150-700, 150-720, and 150-740. F-W-S

160-573 LEGAL ASPECTS OF CONSTRUCTION. 3 Cr. An examination of various contracts and documents employed in the building construction industry, an analysis of each including the rights of the parties. A study of labor relations involved in the industry such as law and labor, legality of strikes, picketing and boycott activity, its legality as to economic pressure, unfair labor practices, employer and union, rights and responsibilities of the supervisor and the worker. Prerequisite: 150-318. F

160-601 REGULATION OF INDUSTRY. 3 Cr. Economic concentration lessening competition or creating a monopoly and maintaining competition; changing relationships between government and industry, emphasizing regulatory legislation, administrative agencies, national policies, and social control. Prerequisite: 150-318. F-W

160-679 MARKETING RESEARCH. 3 Cr. Experimental and survey techniques used to secure information necessary for successful marketing such as who buys what, when, where, how and why. Primary and secondary sources of information examined. Data collection, compilation, and analysis methods reviewed plus effective communication of conclusions and recommendations to management. Prerequisite: 320-325, 150-330. F-W

160-690 ADMINISTRATIVE AND BUSINESS POLICIES. 3 Cr. Integrates the student's previous studies in business, and further develops his ability to deal more effectively with business problems

by learning and applying the scientific approach to decision making. Includes business cases on policy formulation and administration, involving the functions of manufacturing, marketing, finance, accounting, personnel, and public relations. Prerequisites: 160-304, 160-330, and 160-340. F-W

170-501 TECHNOLOGY-RESOURCES-ENVIRONMENT. 2 Cr. A problem solving course which will show our present and probable future position with reDspect to known available resources. The relationship between rate of resource use and environmental degradation will be demonstrated, and possible consequences of our present resource consumption patterns will be considered. A pursuit of ecologically sound resource consumption patterns, more appropriate to the presently known available resources will be conducted. F-W

170-502 SOLID WASTE TECHNOLOGY. 3 Cr. A study of solid wastes and the technology available for processing them, with emphasis on recovering some economic benefits. W

170-506 MAINTENANCE OF PROCESSING EQUIPMENT. 3 Cr. Recondition hand and power woodworking and metalworking equipment. Identify and correct malfunctions commonly encountered with such equipment. Information on manufacturers performance specifications, technical data on cutting tool specifications, and preventive maintenance schedules. Criteria for the selection of hand tools, power equipment, measuring instruments, and safety devices. F-W

170-507 METRIC AMERICA. 1 Cr. An in-depth study of the international (SI) metric system with special emphasis on SI terms, units, standards, and the development of concepts of the metric units of mass volume, and length. Metric measuring instruments will be used, and methods of teaching the SI metric system will be discussed.

170-510 INDUSTRIAL MATERIALS. 4 Cr. A broad technical study of common industrial materials normally dealt with and used for a multitude of industrial and domestic applications. The study of materials will begin with a review of the structure of matter continuing then to consider the material families for common properties and significantly different characteristics. Prerequisite: Chemistry.

170-515 METALLURGY. 3 Cr. Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys. Prerequisite: 311-115. F-W

170-535 DIE AND MOLD MAKING. 3 Cr. Technical requirements for designing and fabricating tools, dies and molds for production applications. Prerequisite: 170-331. W

170-537 NUMERICAL CONTROL IN MANUFACTURING. 1-3 Cr. An investigation of numerical control of machine tools, justification of numerical control, types of control units and systems, feedback systems, manuscriptwriting and manual programming, tape punching and machine set up, fixture design and tool setting. A working knowledge of the basic machining processes is recommended. Prerequisite: 170-101 or 170-202. W

170-550 PLASTICS II. 2 Cr. Technical information relating to plastic materials and to tooling design for plastics. Product development with emphasis on experimental design in tooling and quality control. Prerequisite: 170-250. W

170-559 FOUNDRY SEMINAR. 1-2 Cr. Metallurgy principles relating to casting processes; sand testing, phasing diagrams, fluid mechanics, gates, risers, gating systems, inspection, non-destructive testing.

170-560 AIRCRAFT CONSTRUCTION WORKSHOP. 3 Cr. A workshop in which every student participates in the construction of a full scale aircraft. A thorough study of proved plans preceeds individual completion of assignments in the fabrication of parts, assembly, rigging, powering, finishing, of an aircraft. Prerequisite: Degree held in Industrial Education or permission of instructor.

170-565 WELDING II. 2 Cr. Advanced work in arc and oxy-acetylene welding techniques; vertical, horizontal, overhead positions; destructive and non-destructive testing; MIG and TIG welding processes; oxy-acetylene machine and air carbon arc cutting. Prerequisite: 170-365.

170-570 MECHANICAL SYSTEMS. 2 Cr. Plumbing and electrical requirements for residential and commercial buildings. Prerequisite: 170-370. W

170-575 BUILDING CONSTRUCTION PRACTICUM. 2-4 Cr. Technical information and problems involving construction and the actual development of a light residential structure. Prerequisite: 170-270.

170-580 PACKAGING DEVELOPMENT. 3 Cr. Applications of the packaging functions. Taking a product and developing its complete packaging system from final production of the product on through until it reaches the ultimate consumer. Prerequisite: 170-480. W

170-585 PACKAGING SEMINAR. 2 Cr. Discussions on the current packaging problems or developments. Choice of problems based upon student interests and current issues. F

170-637 NUMERICAL CONTROL II: PROGRAMMING FOR CONTINUOUS PATH CONTROLS. 3 Cr. Application of the computer for generating programs in machine curved, nonsymmetrical surfaces. Involves mathematical concepts of N/C. Interpolation of surfaces between points by straight line or logarithmic methods, writing computer programs and proving problems. Field trips to industries using numerical control equipment. Prerequisite: Background in machining or equivalent. Computer programming recommended, 170-537.

170-713 WOOD PROPERTIES I: STRUCTURE AND CHARACTERISTICS. 3 Cr. A study of the structure, characteristics and physical properties of wood and wood fiber as industrial material. Testing of physical properties: static bending, impact, compression, shear, tension and hardness; moisture content, specific gravity; dimensional change and micromacro photography. F-W

170-715 PLASTICS MATERIALS AND PROCESSES. 3 cr. Recent developments in materials, machinery, processing and markets in the plastics industry.

170-798 PROBLEMS IN INDUSTRY AND TECHNOLOGY. 2-6 Cr. Substantive study and activity for specialists in the materials and processes field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant. Preparation of a technical report may be repeated for up to six credits. Prerequisites: 190-739 and consent of department chairman.

190-500 EVOLUTION OF TECHNOLOGY. 2 Cr. In studying contemporary technology there is a need to understand how things got to where they are, and where they might go from here. This will provide a broad look at relationships between mechanical and social inventions and the role technology plays in human and institutional behavior.

190-505 SCHOOLFLIGHT WORKSHOP. 1-3 Cr. Organizational patterns, available alternatives, and recommended procedures for incorporating full-scale aircraft construction in schools.

190-525 TECHNOLOGY FOR ELEMENTARY SCHOOL CHILDREN. 2 Cr. Development, philosophy, objectives, and course organization for industrial arts for the elementary schools. Suitable laboratory work in woods, metals, plastics, and drawing.

190-533 SHOP PLANNING AND EQUIPMENT SELECTION. 2 Cr. Principles of school shop planning including equipment selection and placement, plus selection, care, and arrangement of supplies. W-S

190-600 RATIONALE FOR AMERICAN INDUSTRY. 2 Cr. A study of the place and function of American Industry in the total school curriculum. W-S

190-606 LEARNING ACTIVITIES IN INDUSTRIAL EDUCATION. A study and design of learning activities for industrial and vocational education. Learning activities will be developed on selected levels of the cognitive, psychomotor, and affective domains to carry out stated behavioral objectives. An evaluation of the appropriateness of learning activities as presented in contemporary curriculum projects.

190-637 SCHOOL SHOP ORGANIZATION AND MANAGEMENT. 2 Cr. Experience in administration, project development and teaching problems associated with industrial education.

190-638 COURSE CONSTRUCTION. 2 Cr. Directed experience in curriculum development and course of study construction for industrial education teachers. Experiences in developing behavioral objectives and in the development of instructional materials which will lead to the realization of these objectives. A vehicle of instruction will be the development of a course of study, instructional package, and/or unit of instruction. W-S

190-701 CONCEPTS OF AMERICAN INDUSTRY. 4 Cr. A study of the substantive conceptual areas of American Industry: communication, transportation, finance, property, research, procurement, relationships, marketing, management, production, materials, processes, and energy. Prerequisite: 190-700.

190-702 IMPLEMENTATION OF AMERICAN INDUSTRY. 2 Cr. Interrelationships of American Industry Concepts: communication, transportation, finance, property, research, procurement, relationships, marketing, management, production, materials, processes, and energy. Study of methodology involved and familiarization with the special teaching materials available. Prerequisite: 190-701.

190-704 HISTORY OF INDUSTRIAL EDUCATION. 2 Cr. Evolution of modern industrial education through the people, movements, events and institutions that contributed to its formation. Developments and conditions in education and society also considered plus their relationship to the theory and practices of industrial education throughout the years. F-S

190-708 ISSUES IN INDUSTRIAL EDUCATION. 2 Cr. A seminar dealing with selected current issues in industrial arts. Development of abilities to develop a position and defend it, to be critical without being offensive, and to be professional in an emotional atmosphere. W-S

190-710 CURRICULAR INNOVATIONS AFFECTING INDUSTRIAL EDUCATION. 2 Cr. Study of current innovative programs and practices in the teaching of industrial arts. F-S

190-733 IMPACTS OF TECHNOLOGY. 2 Cr. A contemporary, historical and futuristic look at some of the economic, sociological, psychological and political implications of industry and technology. Students will identify and investigate several impacts of industry and/or technology to show depth of understanding and relationships between them. F-S

190-735 PROBLEMS IN INDUSTRIAL EDUCATION. 2 Cr. Identification, selection, and the completion of a problem in Industrial Education, culminating in a Plan B paper. Prerequisite: 190-740. F-W-S

190-739 INTRODUCTION TO PROBLEMS IN INDUSTRY AND TECHNOLOGY. 1 Cr. Study of selection criteria for advanced technical problems in industry and technology, development of techniques appropriate to attacking these problems, identification of industries and organizations relating to these problems and preparation of a detailed proposal to explore a particular problem. Students should enroll for this during their first graduate enrollment and should plan to take the appropriate IXX-7XX, Problems in Industry and Technology during their next enrollment. May not be repeated for credit. F-W-S

190-740 SYNTHESIS OF PROBLEMS IN INDUSTRY AND TECHNOLOGY. 2 Cr. A synthesizing and professionalizing experience with the substance of 100-540 as the base. Preparation and presentation of oral and written reports, evaluation of experiences. Satisfactory completion of the seminar paper for this course may constitute meeting the Plan B requirements for the Master of Science degree with a major in industrial education. Prerequisite: 190-739, 421-740.

190-770 THESIS - INDUSTRIAL EDUCATION. 6 Cr. Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisite: 421-740 and approval of major adviser. F-W-S

190-890 FIELD STUDY IN INDUSTRY AND TECHNOLOGY. 6 Cr. A study which provides the graduate student with the opportunity to: 1) explore in-depth the body of knowledge associated with his substantive teaching field in industry and technology, 2) provide an educational experience for implementing this knowledge into the classroom situation, and 3) devise methods to determine if this methodology has brought about desired behavioral changes.

HOME ECONOMICS

200-681 PROBLEMS IN HOME ECONOMICS. 2 Cr. This course will deal with special problems in-depth as initiated by an instructor or according to student needs and interests. This course should serve as a culminating educative experience for students in the various areas of home economics. Prerequisite: Consent of instructor.

200-698 NATIONAL STUDY TOUR IN HOME ECONOMICS. 1-3 Cr. Group membership limited to 20 and majors of the particular area to be studied have priority. Study visit to a major United States city relating student's learning in his major area to business and industry. Prerequisite: Consent of the instructor.

200-730 SEMINARS IN HOME ECONOMICS.

200-764 CURRENT PROBLEMS IN HOME ECONOMICS. 2 Cr. This course will be designed to meet student needs and interests concerning the relevant problems in home economics.

212-524 CHILD DEVELOPMENT II. 3 Cr. An empirical study of the physiological, intellectual, social and emotional development of children. Prerequisites: 212-124 and 212-264. F-W

212-530 ADULTHOOD AND THE FAMILY. 3 Cr. Study of adults in the family context during the early and middle years. Prerequisite: 212-124, 212-324. F-W

212-535 SEMINAR ON SELF-GROWTH. 2 Cr. A seminar based on a study of theories of the self. Exploration of selected aspects of self-development and actualization. Prerequisite: 212-324 or 212-350. F-W-S

212-541 HOME INTERVENTION PROGRAMS IN EARLY CHILDHOOD PROGRAMS. 1 Cr. Planning, supervising, and implementing a home intervention program for young children and their families. S

212-545 PRESCHOOL PROGRAMMING FOR THE MENTALLY HANDICAPPED. 2 Cr. Program development and implementation for preschool mentally handicapped children. Prerequisite: Consent of department. F-W

212-553 DUAL CAREER FAMILIES. 1 Cr. The dual career marriage as a form of family life; benefits and problems encountered. F-W-S

212-580 FUTURE OF THE FAMILY. 1 Cr. Evaluation of experimental and utopian forms of the family and study of the future of the family. F-W-S

212-581 DYNAMICS OF MARITAL INTERACTION. 2 Cr. Patterns of husband-wife power distribution, task differentiation, decision making, communication, role adaptation, and marital satisfaction over the family life cycle. A theoretical analysis of marital behavior within the family as a social system. Prerequisite: Consent of instructor. W-S

212-598 AMERICAN STUDY TOUR IN CHILD DEVELOPMENT. 2 Cr. Study tour of child development centers. Discussions and lectures by leaders in the field of child development. Prerequisite: Consent of instructor. S

212-607 PARENT COUNSELING. 2 Cr. Various approaches and techniques of working with parents. Observation and experience with problems parents face in child-rearing. Prerequisites: 212-124, 212-264. W

212-624 ADVANCED CHILD STUDY. 3 Cr. A study of principles and review of literature pertaining to children. Prerequisites: 212-124, 212-264. W

212-626 SPECIAL TOPICS IN THE STUDY OF FAMILY LIFE. 3 Cr. A review of programs and literature related to family life with opportunity for individual study of problems of personal or professional interest. Prerequisite: 212-350. F-W-S

212-637 SEMINAR IN CHILD DEVELOPMENT. 2 Cr. Exploration in-depth of special problems and aspects in child development field with perference given to students interests. Prerequisite: Consent of instructor. W

212-638 CHILD ABUSE AND NEGLECT. 2 Cr. Study of child abuse and neglect as it affects the abused/neglected child and the abusing/neglecting family. Means of coping with family and social problems are discussed. Prerequisite: Permission of instructor.

212-650 INTRODUCTION TO MARRIAGE AND FAMILY COUNSELING. 3 Cr. Conceptual frameworks and approaches to marriage and family counseling. Prerequisite: Consent of instructor. F-W-S

212-651 MARRIAGE AND FAMILY COUNSELING SEMINAR. 3 Cr. The understanding of application of basic counseling techniques to premarital, marital, family and couples-group counseling under supervision of professional marriage and family counselor. Prerequisite: 212-650 or consent of instructor. F-W

212-652 FATHERHOOD. 1 Cr. Critical issues surrounding the role of the father in today's society. Prerequisite: 212-250 or 212-124.

212-653 COUPLES COMMUNICATIONS TRAINING. 2 Cr. Communication theories and findings will be applied to the area of marriage and family relationships. It will involve an intensive examination of the Minnesota Couple's Communications Program. Prerequisite: Consent of instructor. W-S

212-660 CURRENT SEX RESEARCH. 1 Cr. Overview and evaluation of current research concerning human sexual behavior and attitudes. Prerequisite: 212-250. F-W-S

212-664 PROBLEMS IN EARLY CHILDHOOD CURRICULUM. 1-3 Cr. Philosophy and methodology of Early Childhood Education with emphasis on problems confronting teachers in this area. Prerequisite: 212-303. S

212-665 ADMINISTRATION OF EARLY CHILDHOOD EDUCATION PROGRAMS. 2 Cr. A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating Early Childhood Education programs. Field trips required. Prerequisites: 212-408B. F-W

212-666 FAMILY PLANNING. 1 Cr. Factors influencing family planning and the knowledge and services which enable individuals to effectively practice family planning. Prerequisite: One undergraduate course in family relations. F-W-S

212-680 THE AGING PERSON. 2 Cr. Study of the characteristics and needs of aged members of the society with emphasis on the intergenerational relationships of family members. F-W-S

212-685 SEMINAR ON THE CULTURALLY DISADVANTAGED CHILD AND FAMILY. 3 Cr. Study of problem, needs, related research and current trends to assist the disadvantaged child and family toward fuller actualization of potentialities for self and society. Prerequisite: 212-324 or 212-350. F-W

212-693 CHILD DEVELOPMENT FAMILY LIFE PRACTICUM. 4-8 Cr. Practicum experiences in community-based child development and/or family life agencies and programs. Prerequisite: Approval of instructor. F-W-S

212-703 SEMINAR IN CHILD DEVELOPMENT. 2 Cr. Advanced seminar in study of all aspects of child development. W

212-707 ISSUES AND PROBLEMS IN PARENT EDUCATION. 2 Cr. A study of the issues and problems of parent groups and the training of parent-group leaders. Prerequisites: 212-407 or consent of instructor. W

212-728 FAMILY LIFE ISSUES. 2 Cr. A study of current issues and problems in marriage and the family. An investigation of research, literature and consideration of theoretical interpretations in today's world. An exploration of how familiar experiences affect behavioral patterns and attitudes of children, adults and self. W

212-740 SPECIAL PROBLEMS IN FAMILY LIFE EDUCATION. 2 Cr. Planning and implementation of community programs in Family Life Education. S

212-7742 HUMAN DEVELOPMENT. 2 Cr. Human development theory, research, changing trends, problems and interpretations will be explored. Emphasis

on application of scientific knowledge to practical relationships with children in the family, school, and community and implications of child development concepts towards understanding of self and others. F

242-752 CHILD DEVELOPMENT PROGRAMS IN SECONDARY SCHOOLS. 2-3 Cr. Planning child development curriculum and laboratory experience for the secondary school. Prerequisite: 212-124, 212-264. S

212-766 PROBLEMS IN EARLY CHILDHOOD EDUCATION. 3 Cr. Overview of issues in Early Childhood Education with emphasis on problems confronting teachers in establishing Early Childhood programs in communities and school. S

212-793 MARRIAGE AND FAMILY COUNSELING PRACTICUM I. 4 Cr. Preparation for professional marriage and family counseling services through seminar discussion, observation, and supervised counseling experience. Prerequisites: (1) personal screening and approval by instructor or admission without deficiency to the Marriage and Family Counseling program, (2) concurrent registration in 413-793, Marriage and Family Counseling Practicum, (3) commitment to the second semester sequel - enrollment in 413-794 and 212-794. F

212-794 MARRIAGE AND FAMILY COUNSELING PRACTICUM II. 4 Cr. Sequel to 212-793. Continuing preparation for professional marriage and family counseling services through seminar discussion, observation, and supervised counseling. Prerequisites: (1) successful completion of 212-703 and 413-703, (2) concurrent registration in 413-704 - Marriage and Family Counseling Practicum. W

214-525 FASHION MERCHANDISING II: MENSWEAR AND BOYSWEAR. 2 Cr. An in-depth analysis of the social and economic trends within the menswear and boyswear industry. The course will include the historic, current, and future trends in the industry. Prerequisite: 214-325. F-W

214-545 COMMERCIAL AND HOUSEHOLD TEXTILES. 2 Cr. Raw materials, fabrics structures, specifications and legislation related to quality, performance and maintenance of textiles for commercial and household uses. W

214-550 TEXTILE EVALUATION. 3 Cr. Problems involving fiber identification, fabric, performance, and fabric care. Chemical and microscopic testing procedures. Investigation methods for gathering and interpreting data. Individual problems. Prerequisite: 214-140. F-W

214-566 APPAREL CONSTRUCTION - KNIT AND STRETCH FABRICS. 2 Cr. A study of the principles of knit and stretch sewing and their application in the construction of garments. Prerequisite: 214-266. F

214-580 FLAT PATTERN. 3 Cr. A study and application of the techniques of pattern designing through drafting methods. An original garment is designed and constructed. Prerequisite: 214-266. F-W

214-590 PRACTICUM IN TEXTILE DESIGN. 3 Cr. An exploratory course devoted to the use of the following textile design techniques as a means of artistic expression: stitchery, weaving, knotting, applique and hooking. Emphasis will be placed on good design and creativity. Prerequisite: 304-101. F-W

214-592 PRACTICUM IN TEXTILE PRINTING. 2 Cr. Exploring use of textile design techniques, primarily silk screen, tie dye, printing, and batik. Emphasis will be placed on good design and creativity. Prerequisite: 304-101. F-W

214-605 EUROPEAN STUDY TOUR. 3-6 Cr. Tour of European centers of art, clothing, and textiles. Study of the cultural patterns. Six week program includes lectures by consultants and seminars on the various phases of the fashion and fabric industries. S

214-610 HISTORY OF COSTUME: ANCIENT TO EUROPEAN 1900. 3 Cr. Development of costume throughout the ages. Fashion as it reflects the cultures of the past and influences present-day costume. F

214-611 HISTORY OF AMERICAN COSTUME. 3 Cr. American costume as it evolved from colonial to contemporary times with emphasis on costume characteristics and social, political, religious and cultural influences. W

214-617 SOCIAL-PSYCHOLOGICAL ASPECTS OF CLOTHING. 3 Cr. The social significance of clothing to an individual and the influence it has upon his behavior. F-W

214-625 FASHION MERCHANDISING III: MASS MERCHANDISING. 3 Cr. History, planning, design and techniques of mass merchandising as related to shopping centers, discount stores, and franchised and leased operations. Prerequisite: 214-325. F-W

214-639 NATIONAL STUDY TOUR TO FASHION INDUSTRY. 1 Cr. Five day visit in New York City (or alternate city). Program will involve study tours, discussions, and lectures by leading people in American fashion market. Prerequisite: Consent of instructor. W

214-645 U.S. TEXTILE STUDY TOUR. 2 Cr. Tour of the textile industries in the United States. Includes professional visits, lectures and discussions by consultants in the textile field.

214-650 TEXTILE SCIENCE. 3 Cr. Structural aspects of textile fibers and fabrics. Application and evaluation of dyes, finishes, and soil removal agents. Fiber analysis through solubility and microscopic appearance. Prerequisite: 214-140 Textiles. W

214-655 RECENT DEVELOPMENTS IN CLOTHING AND TEXTILES. 2 Cr. Various areas of apparel and textile are explored in light of new developments in these and related fields. Prerequisites: 214-140 and 214-266, or consent of instructor.

214-666 TAILORING. 3 Cr. Application of tailoring techniques in making suits and coats. Prerequisite: 214-266. F-W

214-670 THEATRICAL COSTUMING. 3 Cr. Problems in costuming a theatrical production. Study and interpretation of a play so as to plan, design and build the costumes for a production. Prerequisite: 214-266 or permission of instructor. F-W

214-680 DRAPING. 3 Cr. Application of draping principles in the designing and construction of garments. Emphasis on creativity. Prerequisite: 214-266. F-W

214-681 APPAREL DESIGN - DRAPING. 1 Cr. Apparel design through the advanced techniques of draping. Emphasis on the individuality and on fabrics of interesting textures and design. Prerequisite: 214-680.

214-682 APPAREL DESIGN - FLAT PATTERN. 1 Cr. Draft a master pattern for self and develop paper patterns from a master pattern from given and self designed garment sketches that incorporate advanced techniques. Construct garments from the evolved patterns. Prerequisite: 214-580.

214-690 ADVANCED TEXTILE DESIGN -STITCHERY. 1 Cr. Exploration in depth of the creative potentials of specific areas in textile design, stitchery-applique. Prerequisite: 214-590. W

214-691 ADVANCED TEXTILE DESIGN - NON LOOM. 1 Cr. Exploration in-depth of the creative potentials of specific areas in textile design - non-loom interlacing thread techniques (spring macrame, netting, knitting, crocheting). Prerequisite: 214-590. W

214-692 ADVANCED TEXTILE DESIGN - HOOKING. 1 Cr. Exploration in-depth of the creative potentials of specific areas in textile design - hooking - rya. Prerequisite: 214-590. W

214-693 STRUCTURAL DESIGN AND WEAVING. 2 Cr. A studio course involving experiences in weaving and other structural techniques. Prerequisites: 304-101 and consent of instructor. F-W-S

214-694 ADVANCED WEAVING STUDIO. 2 Cr. Advanced study and experiences in complex hand weaving techniques. Focus on block theory, pile constructions, leno techniques, and double cloth. Individual exploration encouraged. Prerequisite: 214-693 or equivalent. W-S

214-695 HISTORIC AND CONTEMPORARY FABRICS. 3 Cr. Study of historic and contemporary fabrics with analysis of designs and techniques of decorating fabrics. The contribution of decorative fabrics to the enrichment of human experience. F-W

214-718 CLOTHING TODAY'S FAMILY. 2 Cr. Clothing needs as affected by various psychological, sociological, and economic influences. Investigate research and theories, develop techniques, and seek possible solutions to problems of clothing today's consumer satisfactorily within "life style" and income.

214-740 ADVANCED TEXTILES. 2 Cr. Investigations and new developments in the textile field. Opportunity for individual problems. Prerequisites: 214-140, 214-640. W

214-760 SEMINAR IN CLOTHING AND TEXTILES. 2 Cr. Discussion and interpretation of recent developments in clothing and textiles. Individual reports. Prerequisite: Teaching experience or consent of instructor. W

214-765 WORKSHOP IN CLOTHING AND TEXTILES. 1-2 Cr. Opportunity for cooperative work in some aspect of clothing study. Prerequisite: Teaching experience.

214-780 ADVANCED DRAPING. 1 Cr. Manipulation of various fabrics on a dress form to develop garments from given and self designed sketches that reflect advanced techniques. Construct garments from patterns. Prerequisite: 214-680.

214-781 ADVANCED FLAT PATTERN. 1 Cr. Draft and develop paper patterns for garments by varying a master pattern from given and self designed sketches that reflect advanced techniques. Construct garments from pattern. Prerequisite: 214-580.

214-798 PROBLEMS IN CLOTHING AND TEXTILES AND DESIGNS. 2 Cr. Identification, selection and completion of a problem in clothing and textiles culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

214-799 THESIS - CLOTHING AND TEXTILES. 6 Cr. Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Prerequisite: 421-740 and approval of major adviser. F-W-S

229-505 NUTRITION FOR THE AGED. 2 Cr. Nutrient requirements and food consumption patterns of the elderly. Food services for aging Americans. Prerequisite: 229-212 Nutrition or consent of the instructor. F

229-514 FOOD AND INDUSTRY. 2 Cr. Broad concepts of the interrelationship between properties of raw food materials and methods of processing in the food industry.

229-606 NUTRITION EDUCATION. 3 Cr. Nutrition education as planned behavioral change with emphasis on problems and solutions used in instructing various populations. Identification, development, and evaluation of nutrition resources. Prerequisites: 229-212, 242-201. F-W

229-608 ADVANCED MEAL MANAGEMENT PRACTICUM. 2 Cr. Individualized problem-solving of critical incidences in meal management: variations of meal service for entertaining, meals at different economic level, use of specialized equipment in meal preparation and service, and other interrelated problems. Prerequisite: 229-318.

229-618 DIET THERAPY. 3 Cr. Principles and methods for the use of diet as a therapeutic measure in certain pathological conditions. Prerequisite: 229-410. F-W

229-620 FOOD STYLING. 2 Cr. Food as media for artistic expression. Effective use of color, form and texture in food styling. F-W

229-630 FOOD BEHAVIOR. 3 Cr. Food habits as they control behavior of eating and resultant nutritional status. Food habits formation to meet environmental variations—physical, physiological, psychological, or social needs. Modification of food behavior. Prerequisites: 229-212 (preferably within past 2 years) Courses

in social and behavioral sciences are recommended. W

229-631 READINGS IN FOOD SCIENCE AND NUTRITION. 2 Cr. Critical reading, evaluating, and reporting from pertinent current journals and other publications.

229-633 MATERNAL AND CHILD NUTRITION. 3 Cr. Application of basic knowledge to maternal, infant, child, and adolescent nutrition. Prerequisites: 229-212, 308-132. F-W

229-638 EXPERIMENTAL FOODS. 3 Cr. Experimentation with selected food materials, techniques, and equipment. Opportunity for directed study in an individually chosen area. Prerequisites: 229-124 or 229-240, 311-201. F-W

229-642 ADVANCED FOODS. 2 Cr. Comparative studies of food selection and preparation; appraisal of foods. Prerequisite: 229-124 or 229-240. F-W

229-661 SOCIAL AND CULTURAL ASPECTS OF FOOD. 2 Cr. Social, economic, and cultural influence on man's food patterns. F-W

229-665 EUROPEAN FOODS STUDY TOUR. 3-6 Cr. Tour to study cultures, food patterns, and different phases of food industries in Europe.

229-680 COMMUNITY NUTRITION. 3 Cr. Community nutrition as the application of the nutritional sciences to the consumer as groups or as individuals. Interface between food and people; cultural influence on food habits. Assessment of needs and current issues for community nutrition/nutrition education programs. Prerequisites: 229-212 (preferably within past 2 years) Courses in social and behavioral sciences are recommended. F

229-701 TRENDS IN NUTRITION. 1-2 Cr. Practical application of recent developments in the field of nutrition. Prerequisite: 229-212.

229-702 MINERALS AND VITAMINS. 3 Cr. Absorption and intermediary metabolism of minerals and vitamins. Prerequisite: 229-410.

229-705 GERIATRIC NUTRITION. 2 Cr. Theory and relationships of nutrition, longevity, and aging. Food and nutrition legislation for the elderly—theory and implementation. Nutritional implications of acute and chronic disease states common among the elderly.

229-706 INSTRUCTIONAL TECHNIQUES IN FOOD SYSTEMS. 2 Cr. Training techniques for teaching courses related to commercial food and food service. F

229-708 FOOD SEMINAR. 2 Cr. Discussion and interpretation of recent developments in food preparation, food processing and food products. Choice of problems based on the needs and interests of the students.

229-710 CLINICAL NUTRITION. 3 Cr. Innovative approaches in nutrition therapy. Clinical experience offered in area hospitals. Prerequisite: 229-618 or equivalent.

229-711 NUTRITION SEMINAR. 2 Cr. Discussion and interpretation of recent developments in fundamental and applied nutrition. Choice of problems based on needs and interests of students.

229-715 MENU ANALYSIS AND PLANNING. 3 Cr. Principles of planning and designing menus for production and sales in commercial and institutional food services. Special emphasis is given to computerization of the menu planning process. Prerequisite: 354-141 or 354-741.

229-720 WORKSHOP IN FOODS. 1 Cr. Individual and group investigations and solutions of problems in foods/food service. May be repeated for five additional hours of credit.

229-721 WORKSHOP IN NUTRITION. 1 Cr. Individual and group investigations and solutions of problems in nutrition science/nutrition education. May be repeated for five additional hours of credit.

229-729 PROTEINS. 3 Cr. Digestion, absorption, and intermediary metabolism of protein. Prerequisite: 229-410.

229-730 RECENT DEVELOPMENTS IN FOOD SCIENCE. 2 Cr. Consideration of current research which gives perspective in food science. Prerequisites: 311-201, 421-761 or 421-740.

229-736 CARBOHYDRATES AND LIPIDS. 3 Cr. Digestion, absorption, and intermediary metabolism of carbohydrates and lipids. Prerequisite: 229-410.

229-740 FOOD PRESERVATION TECHNOLOGY. 3 Cr. Application and evaluation of the technology of food preservation to selected areas in food science. Prerequisites: 311-511 and 308-206.

229-746 FOOD INNOVATIONS. 2-3 Cr. Effects of food industry innovations on preparation and service of foods.

229-747 PROBLEMS IN FOOD SCIENCE AND NUTRITION. 2 Cr. Identification, selection and completion of a problem in Food Science and Nutrition, culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

229-756 ADVANCED EXPERIMENTAL FOOD. 3-4 Cr. Principles of research methods applied to directed investigations in food preparation. Prerequisite: 229-638. F-W

229-770 THESIS — FOOD SCIENCE AND NUTRITION. 6 Cr. Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major advisor. F-W-S

242-500 EXTERNSHIP: HOME ECONOMICS COMMUNITY EDUCATION. 4-8 Cr. Practicum in one or more of the following: extension services in home economics; elementary education in home economics; post-secondary education in home economics; occupational

teaching experience in home economics; and community educational services. Course cannot be taken for graduate credit without the approval of the graduate program director. Prerequisite: Consent of department. F-W

242-503 PROGRAMS IN HOME ECONOMICS FOR THE MIDDLE SCHOOL. 2 Cr. Development of techniques, materials, and curriculum concepts in Home Economics with the application of principles of human growth and development for teaching in the middle school. W

242-620 VOCATIONAL PROGRAMS IN HOME ECONOMICS. 2 Cr. Techniques, materials and curriculum for wage earning programs in Home Economics in the secondary and post-secondary school. Preliminary procedures for program development included. Prerequisites: 242-301, 469-502. F-W

242-623 EDUCATION FOR CONSUMER HOMEMAKING. 2 Cr. Development of curriculum including evaluation of methods and materials for teaching Consumer Education at secondary level. Prerequisite: 242-301. W

242-625 OCCUPATIONAL EDUCATION IN CLOTHING SERVICES. 2 Cr. Development of the concept of occupational education in secondary, post secondary and adult programs in home economics; specifically related to a cluster of courses in clothing services.

242-630 CONCEPTS OF EXTENSION EDUCATION. 2 Cr. Study of the concepts and processes involved in conducting educational programs for adult and youth; includes philosophy, objectives and organization of Extension Education, leadership, development, program development, teaching methods and evaluation. F-W

242-640 HEALTH PROGRAMS IN HOME ECONOMICS. 2 Cr. Curriculum and methodology for health programs in home economics including occupational programs. Prerequisite: Health course.

241-651 FAMILY LIFE EDUCATION PROGRAMS. 2 Cr. Development of family life education programs including methods, materials and techniques for teaching family relationships and child development at the secondary level. Prerequisite: Consent of instructor. F-W-S

242-708 CURRICULUM STUDIES IN HOME ECONOMICS. 2 Cr. Principles of curriculum construction. Review of recent literature on curriculum development. Evaluation of curriculum practice and techniques.

242-710 APPLIED EVALUATION IN HOME ECONOMICS. 2 Cr. Theory and application of principles in planning evaluation techniques in Home Economics to assess behavioral changes in the cognitive, affective and psychomotor domains. W-S

242-712 HOME ECONOMICS FOR THE JUNIOR HIGH SCHOOL. 3 Cr. Principles of curriculum development for the home economics program in the junior high school. Emphasis on recent research, philosophy, and emerging practices in program patterns.

242-720 CURRENT PROBLEMS IN HOME ECONOMICS EDUCATION. 2 Cr. Consideration of problems in contemporary living that are affecting home economics education and their influence on the teaching of homemaking. S

242-721 HOME ECONOMICS OCCUPATION ORIENTED INSTITUTE. 4 Cr. Development of an understanding of the learner and his environment. Preparation of outlines and materials for secondary level home economics occupation-oriented courses to meet the needs of these learners. Prerequisites: Two years of teaching experience in home economics and recommended by the Local Vocational Education Coordinator.

242-728 ORGANIZATION AND ADMINSTRATION OF HOME ECONOMICS. 2-3 Cr. Opportunity for advanced students to work on solution of actual field problems dealing with organization and administration of home economics in various types of schools. S

242-744 SEMINAR IN HOME ECONOMICS EDUCATION. 2 Cr. Readings, discussions, and reports of recent literature in education with implications for teaching home economics. Paper on individual problem. S

242-744 SEMINAR NO. I-NEW DEVELOPMENTS IN CURRICULUM CONSTRUCTION. 2 Cr. A study of new developments which relate home economics and education as they concern curriculum construction.

242-744 SEMINAR NO. 2-NEW DEVELOPMENTS IN METHODS AND MATERIALS. 2 Cr. A study of new developments of methods and materials appropriate for Home Economics Education. S

242-744 SEMINAR NO. 3-NEW DEVELOPMENTS IN DEPARTMENTAL PLANNING. 2 Cr. A study of the concepts of space and equipment and development of principles and guidelines of home economics departmental planning.

242-744 SEMINAR NO. 4-COLLEGE TEACHING IN HOME ECONOMICS. 2 Cr. Educational techniques, methods and materials especially applicable to college teaching in home economics. F-W

242-744 SEMINAR NO. 5-INDIVIDUALIZED INSTRUCTION. 2 Cr. Study of the multi-role of the home economics teacher in the guidance of the home economics students in the classroom. S

242-744 SEMINAR NO. 6-CONTEMPORARY ISSUES IN HOME ECONOMICS EDUCATION. 2 Cr. Contemporary issues in Home Economics Education. S

242-744 SEMINAR NO.7-AUXILIARY WORKERS IN HOME ECONOMICS. 2 Cr. A national trend toward employment of para-professionals or auxiliary workers is observed in many areas of labor. An exploration of these possibilities in home economics and plans for their education will be foci of this course.

242-770 THESIS-HOME ECONOMICS EDUCATION. 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method

of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major advisor. F-W-S

242-775 PROBLEMS IN HOME ECONOMICS EDUCATION. 2 Cr. Identification, selection, and completion of a problem in Home Economics education, culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

245-501 FOOD SERVICE ADMINISTRATION. 3 Cr. Organization and administration of institutional food service systems, personnel selection and training, cost control, and problems of supervision. Prerequisite: 229-318. W

245-513 QUANTITY FOOD PRODUCTION AND SERVICE. 3 Cr. Application of the principles of food preparation to large quantity production, menu and formula standardization, food production costs, and menu planning for institutions. Prerequisite: 245-501 or 245-312. S

245-521 FOOD SERVICE EQUIPMENT. 2 Cr. A comprehensive study of the factors affecting design, selection, layout, and uses of food service equipment and facilities. A quantitative approach in optimum utilization of physical and human resources. Students plan actual layouts of different types of food facilities. Prerequisite: 130-110. F-W-S

245-531 ECOLOGY OF HABITAT. 2 Cr. A broad philosophical as well as physical perspective of human housing and which includes international aspects. A deep insight into family housing needs and the achievement of learning regarding these needs through laboratory experience. Value is placed upon the role of the home economist in the solution of world housing problems. Prerequisite: Six credits of housing, equipment or equivalent. F

245-565 CONSUMER ASPECTS OF LIFE INSURANCE. 1 Cr. Comparative methods of determining life insurance needs; evaluation of the adequacy of policy and program features and its relevance to family financial planning. Prerequisite: 245-275.

245-566 CONSUMER ASPECTS OF HEALTH INSURANCE. 1 Cr. The types and sources of health insurance available to the American consumer. An analysis of the American health care crisis and proposed solutions. Prerequisite: 245-275 or consent of instructor.

245-583 FOOD SERVICE SEMINAR. 2 Cr. Discussion and interpretation of recent developments in institution management. Choice of problems based on needs and interests of students.

245-600 INTEGRATED MANAGEMENT SYSTEMS - HOSPITALITY. 2 Cr. Exploration, comparison and synthesis of practices, concepts, and theories in hospitality management systems. F-W

245-602 THE EXTENDED ROLE OF SCHOOL FOOD SERVICE. 1 Cr. An evaluation of the functions of school food service programs as an integral part of the school curriculum and community.

245-621 FOOD SERVICE LAYOUT ANALYSIS. 2 Cr. Principles, knowledges and techniques required to successfully analyze and design work systems common to food service operations. Prerequisite: Permission of instructor. W

245-625 HOSPITALITY INDUSTRY LAW AND LIABILITY. 3 Cr. The laws applicable to ownership and operation of inns, hotels, motels, restaurants, and other places of public hospitality. F-W

245-626 EMPLOYEE AND LABOR RELATION IN THE HOSPITALITY INDUSTRY. 2 Cr. An investigation of employee and labor relations in the hospitality industry - including the history, legality and techniques of dealing with unionization. F-W

245-640 PSYCHO-SOCIAL DIMENSIONS OF TOURISM. 3 Cr. The various psycho-social dimensions of tourism: motivation, development, community and conflict, as related to consumer-tourists, tourisiers, and residents. W

245-650 HUMAN HABITAT. 3 Cr. Appreciation and understanding of differences in socio-economic factors of the environment which influence effective utilization of family housing resources. Emphasis will be on adjustment and flexibility of safety, comfort convenience, physical and financial maintenance based on the family cycle. Field trips and individual projects.

245-651 HOUSE EVALUATION SEMINAR. 2 Cr. Appreciation and understanding of the socio-economic factors and environmental conditions which influence effective utilization of family resources. Emphasis will be on costs, adaptability, safety, comfort, convenience, and maintenance based on family needs. Projects will be chosen and studied by the individual or group.

245-655 MAJOR KITCHEN APPLIANCES. 3 Cr. The detailed structure and performance analysis of ranges, refrigerators, freezers, disposers, dishwashers, microwave ovens, and selected kitchen appliances. Prerequisite: 245-355. F

245-656 MICROWAVE OVEN. 2 Cr. Application of microwave heating principles to the preparation and service of foods. F-W-S

245-658 EXPERIMENTAL LAUNDRY PROCEDURES. 2 Cr. Application of current knowledge necessary for effective laundering of household fabrics. Special emphasis on use of equipment in the laundry process, laundry aids, and water composition. Experimental laboratory experience. W

245-660 CONSUMER CREDIT. 1 Cr. An investigation of consumer credit—including types and sources of credit, determination of credit costs, considerations before using and regulatory laws. Prerequisite: 245-360 or consent of instructor.

245-661 CONSUMER PROBLEMS. 3 Cr. Factors influencing consumer choices; evaluation of various consumer aids. Consideration of consumer responsibilities to meet current needs. Activities of consumer groups. Prerequisite: 245-360 or 245-275.

245-662 CONSUMER PROTECTION. 1 Cr. Consideration and evaluation of the major federal and state consumer protection agencies as well as major business, industry and private organizations set up to aid consumers. Discussion of avenues of individual and collective consumer redress. Prerequisite: 245-360 or consent of instructor. F-W

245-663 CONSUMER LAW. 1 Cr. An evaluation of the major federal and state consumer protection laws and consideration of the difficulties in obtaining passage and implementation. Discussion of pending federal and state consumer protection legislation. Prerequisite: 245-360 or consent of instructor. F-W

245-670 HOSPITALITY INDUSTRY FINANCIAL ANALYSIS, BUDGETING AND FORECASTING. 3 Cr. The application of accounting and financial analysis techniques to managerial decision-making in the hospitality industry. Prerequisites: 160-206, 245-370, and 245-371. F-W

245-676 FAMILY FINANCE. 2 Cr. A study of the financial decisions and judgments which the average individual and family must make during a lifetime. Emphasis is on income and occupation, family expenditures, credit, savings, taxes, and estate plans. Prerequisite: 320-201. F-W

245-681 SPECIAL PROBLEMS IN HABITATIONAL RESOURCES. 2 Cr. Special seminars on current problems that exist in the area of Habitational Resources. Topics of the seminar can be chosen by the instructor, individual or the group. F-W-S

245-685 DEMONSTRATION TECHNIQUES. 2 Cr. Application of demonstration principles in planning and presenting all types of home economics demonstrations. W

245-686 HOME MANAGEMENT SEMINAR. 1 Cr. To prepare students for management in selected areas of consumer science, family economics, family finance, home management, household equipment, and housing. Opportunity to combine study of special topics and laboratory experiences in home management of family resources in seminars. This course may be repeated for credit.

245-700 MANAGEMENT CONCEPTS IN FOOD ADMINISTRATION. 1 Cr. Management Concepts as they apply to institutional food service operations. W-S

245-701 IMPLEMENTATION OF MANAGEMENT CONCEPTS IN FOOD SERVICE ADMINISTRATION. 1 Cr. The implementation of selected management concepts which will make food service administrators more effective in their roles as food service managers.

245-702 OPERATIONAL CONTROLS IN FOOD SERVICE MANAGEMENT. 1 Cr. A management plan designed to incorporate all necessary controls the institution needs to minimize incurred expenses and maximize work performance associated with production.

245-703 SEMINAR IN ANALYSIS OF HOSPITALITY, INSTITUTIONAL AND COMMERCIAL FOOD SERVICE MANAGEMENT SYSTEMS. 3 Cr. In-depth study of the management systems used in the hotels, restaurants and institutions.

245-706 TRENDS IN HOME MANAGEMENT. 3 Cr. Philosophically oriented, problem-solving method will provide student with management concepts supplemented by experience with projects in student's individual settings.

245-755 RESEARCH IN HOUSING AND EQUIPMENT. 2 Cr. The application of data gathering devices and techniques with proper analysis and utilization of objective and subjective research related to student-selected housing and commercial and/or consumer equipment. Prerequisite: 421-740.

245-765 FAMILY CONSUMER TRENDS. 3 Cr. Consideration of contemporary consumer problems, practices and aids toward selection of qualities needed in certain common household commodities, types of protection including legislation, agencies, affecting consumer well-being and evaluation of consumer information. Field trip. Individual project. Prerequisite: 245-360.

245-777 CONTEMPORARY ISSUES IN FAMILY FINANCE. 3 Cr. Seminar on selected topics and current issues in finance related to concerns of individuals, families, and financial organizations in the community.

LIBERAL STUDIES

300-542 INDUSTRIAL HYGIENE. 3 Cr. Principles and techniques to recognize, evaluate, and control existing or potential occupational health hazards that affect employee safety and health. F

300-575 THE ASCENT OF MAN. 2 Cr. An exploration of the nature and intellectual/philosophical/technical growth of humankind using the "Ascent of Man" TV series as the basis for thought and discussion. Prerequisite: Consent of instructor. W

300-720 CURRENT HUMAN PROBLEMS. 2 Cr. Crucial problems confronting modern man will be selected and analyzed. These problems will be examined from a variety of disciplinary perspectives in the hope that the student will develop a broad understanding of the issues.

304-503 DESIGN. 3 Cr. Development of ideas presented in 304-101 in-depth and complexity. May be repeated. Prerequisites: 304-101, 304-500. F-W

304-505 PROBLEMS IN INTERIOR DESIGN. 2 Cr. Advanced work in the design, selection and arrangement of furnishings for living and working quarters. Prerequisite: 304-504.

304-506 COSTUME DESIGN. 2 Cr. Development of original designs for clothing. Prerequisites: 214-266, 304-101, 304-100, and 304-500.

304-509 PAINTING. 3 Cr. Introduction to the character and use of various painting media. Work from still life and life with reference to problems of two dimensional color composition. Prerequisite: 304-500. F-W-S

304-510 PAINTING. 1-3 Cr. Advanced work in oil painting, with reference to the exploitation on the medium for creative and expressive ends. May be repeated. Prerequisite: 304-509. F-W-S

304-513 CERAMICS. 3 Cr. Basic design and techniques of ceramic production for the artist-potter; forming, firing, and decorating. F-W-S

304-514 CERAMICS. 1-3 Cr. Techniques in the use of clay, glazes, and kiln for the design and production of high fired ceramics. May be repeated. May be taken for 1-3 credits, when the first two 3-credit courses in each area, which are required, have been completed. Prerequisite: 304-513. F-W-S

304-515 ART METAL. 3 Cr. The design and construction of objects in precious metals. Prerequisite: 304-101 or equivalent. F-W-S

304-516 ART METAL. 1-3 Cr. Advanced problems in the design and construction of objects in precious metals. May be repeated. May take course for 1-3 credits, when the first two 3-credit courses in each area, which are required, have been completed. Prerequisite: 304-515. F-W-S

304-517 PRINTMAKING. 3 Cr. The techniques of relief and lithographic printmaking. Prerequisites: 304-101, 304-100, and 304-500. F-W-S

304-518 PRINTMAKING. 1-3 Cr. The techniques of intaglio and serigraphic printmaking. Prerequisites: 304-101, 304-517, and 304-500. F-W-S

304-522 MODERN ART. 3 Cr. The main currents and developments in art from Monet Cezanne to 1950. F

304-525 EGYPTIAN AND MESOPOTAMIAN ART. 3 Cr. The evolution of the arts of ancient Egypt and the Near East.

304-532 ECONOMICS OF HOUSE FURNISHING. 3 Cr. Study of consumer house furnishing problems based on utilitarian, economic, aesthetic and social values of household commodities. Quantity and quality budgets at different price levels. Visits to house furnishing markets.

304-533 PERIOD FURNISHINGS. 3 Cr. A survey of furniture and furnishings in the Western World.

304-534 FASHION ILLUSTRATION. 2 Cr. Problems in graphic techniques, fashion illustration, contemporary fashion design and advertising presentation. Prerequisite: 304-101.

304-602 AMERICAN ART. 3 Cr. The development of the visual arts in the United States from the Colonial period to 1950.

304-604 ART SINCE 1950. 3 Cr. Developments in painting and sculpture in Europe and America since 1950.

304-605 ORIENTAL ART. 3 Cr. Art from prehistoric times to the 19th century in India and the Asian sub-continent.

304-607 ESTHETICS. 3 Cr. A seminar based on a study of statements by philosophers on art. Prerequisite: 304-522. F-W

304-700 DRAWING. 3 Cr. Concentration on the development of visual sensitivity through drawing various media. Prerequisites: 304-100, 304-500. F-W-S

304-701 DRAWING SEMINAR. 3 Cr. The problem considered in the studies in the seminars will be individualized in terms of each student's responsibilities. Consideration will be given in all to the integration of problem solutions in the total program of industrial education and in the total program of education. Prerequisite: 304-500.

304-703 PAINTING. 3 Cr. Introduction to the character and use of various printing media. Work from still life and life with reference to problems of two dimensional color composition. Prerequisites: 304-509, 304-510. F-W-S

304-704 SCULPTURE. 3 Cr. Continuation of investigation of sculptural media for creative and expressive ends. May be repeated. Prerequisite: 304-512 or equivalent.

308-506 FOOD MICROBIOLOGY. 3 Cr. Fundamental methods of food preservation, their effectiveness, and the related spoilage of food products by microorganisms. Quality control techniques employed in determining the presence of specific groups of economically important microorganisms. Prerequisite: 308-306. F-W

308-520 COMPARATIVE ETHOLOGY I. 2 Cr. A comparative study of biological basis of human behavior. Primary emphasis to be given to the applicability of the development of animal behavior patterns to human beings. The phylogenetic adaptations of human behavior are to be examined to consider their theoretical importance for the study of the behavioral sciences.

308-521 COMPARATIVE ETHOLOGY II. 2 Cr. A comparative study of biological basis of human behavior. Primary emphasis to be given to the applicability of the development of animal behavior patterns to human beings. The phylogenetic adaptations of human behavior are to be examined to consider their theoretical importance for the study of the behavioral sciences. Prerequisite: 308-520.

308-650 NEUROANATOMY. 2 Cr. An extension of Comparative Ethology (308-520, 521). An exploration of phylogenetic adaptations of human behavior, utilizing the comparative model developed in 308-520, 521. Emphasis on the detailed study of sensory, central and motor behavior of animals as they relate to human behavior. F-W

308-651 PSYCHOBIOLOGY. 2 Cr. An extension of Comparative Ethology (308-520, 521). An exploration of phylogenetic adaptations of human behavior, utilizing the comparative model developed in 308-520, 521. Emphasis on the detailed study of sensory, central and motor behavior of animals as they relate to human behavior. F-W

311-501 PHYSICAL CHEMISTRY LECTURE. 3 Cr. Fundamental physical

chemistry; the behavior of gases, the liquid state, the properties of solutions, the principles of thermo-dynamics, thermochemistry. 311-503 is normally taken concurrently. Prerequisites: 311-115 or 311-135, 355-156.

311-511 BIOCHEMISTRY. 3 Cr. Fundamental chemistry and metabolism of carbohydrates, lipids, and proteins. Second and third order structure of proteins. Chemistry of nucleic acids. Nature and dynamics of enzymes and enzyme action. Biological oxidations. Laboratory work involving polarimetry, colorimetry, chromatography and quantitative analytical procedures such as the Kjeldahl determination of protein nitrogen. Prerequisites: 311-201, 308-132.

311-515 FOOD CHEMISTRY. 3 Cr. Organic biochemistry of foods with emphasis on the enzymatic and non-enzymatic changes associated with food preparation and storage, such as the Maillard-Browning reaction, denaturation of protein, changes in color, flavor, odor, texture and nutritive value. Techniques for the isolation and identification of the biochemical constituents of foods. Prerequisite: 311-115. W

311-521 TEXTILE CHEMISTRY. 3 Cr. Chemical and physical properties of monomers and high polymers of the following natural and synthetic fibers: cotton, cellulose derivatives, silk, wool, linen nylon, polyesters, acrylics, olefins and polyurethanes. Laboratory ánalysis of textile fibers and textile fiber mixtures and dyestuffs; physical properties of textiles, synthesis of textile polymers, crease resistance. Textile finishing. Prerequisite: 311-115.

311-525 CHEMISTRY OF POLYMERS. 3 Cr. An elementary study of the chemical and physical nature of polymers and of the methods of preparation and the uses of the principal types of polymeric substances. Prerequisite: 311-201.

311-531 QUANTITATIVE ANALYSIS. 3 Cr. Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques. Prerequisites: 311-115, 311-135. F

311-535 INSTRUMENTAL METHODS OF ANALYSIS. 3 Cr. Application of instrumental methods to chemical analysis, including electrochemical methods, ultraviolet, visible, and infrared spectrophotometry, radiochemical methods, and applications of common instrumental methods. Techniques for obtaining reliable results by instrumental means. Prerequisite: 311-115 or 311-135. Recommended: 311-531. F

311-541 CHEMISTRY OF MATERIALS. 3 Cr. The practical applications of the principles and facts of chemistry to technological problems. Topics include: the structure and properties of common materials; fuels—solid, liquid, gaseous, fossil, nuclear—and air pollution; water—domestic, industrial, sewage—and water pollution; electrical properties—cells, batteries, fuel cells, electrolysis—and corrosion of metals; protective coatings—paints, varnishes, enamels, lacquers, plating, anodizing, cladding, etc. Prerequisite: 311-115 or 311-135. F-W

311-553 ENVIRONMENTAL CHEMISTRY. 2 Cr. Environmental Chemistry is a course designed to present the principles and origins of those chemical reactions which lead to an ecological imbalance. Emphasis will be placed on systems

which have contributed to large scale environmental pollution and/or which are of current importance and the study of chemical technology needed to correct this imbalance. Prerequisite: 311-115. F-W

311-555 ENVIRONMENTAL CHEMISTRY LABORATORY. 1 Cr. Environmental Chemistry Laboratory is designed to allow non-science students to perform qualitative and quantitative determinations for common environmental contaminants. The course should be taken subsequent to or along with Environment Chemistry lecture. Prerequisite: 311-553, or concurrently with 311-553. F-W

320-550 MANAGERIAL ECONOMICS. 3 Cr. Decision-making in the firm; demand and cost analysis; competitive and non-competitive price systems, marketing problems, capital budgeting, and criteria for investment decisions. Prerequisite: 320-215. F-W

320-610 CONTEMPORARY AMERICAN ECONOMIC PROBLEMS. 3 Cr. Survey of domestic economic problems at advanced level with special emphasis on applications and effects on industry. Prerequisite: Three credits in economics.

320-615 CONTEMPORARY INTERNATIONAL ECONOMIC PROBLEMS. 3 Cr. Survey of international economic problems at advanced level with special emphasis on application and effects on domestic industry. Prerequisite: Six credits in economics.

320-720 LABOR AND INDUSTRIAL RELATIONS. 2 Cr. Human relations in industry from the viewpoint of labor, management, and the government. W

320-770 ECONOMICS IN EDUCATION. 4 Cr. Educational economics at the micro level including economists' viewpoint on education, education and national economic growth and growth and development, measures of educational benefits and costs, labor market structure and demand for human skills, availability and allocation of economic resources for education, educational planning at state and national level. Prerequisite: 6 semester credits in economics, or consent of instructor.

326-500 LITERATURE FOR THE READING CHILD AND ADOLESCENT. 3 Cr. A critical survey of literature appropriate to children from age 8 until they begin reading adult literature, including adolescent literature and media presentations of literature. Prerequisite: 326-102 or 326-112. W

326-515 TECHNICAL WRITING FOR HOME ECONOMICS. 3 Cr. An overview of specialized writing done by home economists in business. Experience in preparing reports, letters, and other appropriate materials. F-W-S

326-516 TECHNICAL WRITING FOR INDUSTRY. 3 Cr. A survey of the type of writing current in industry. Writing of business reports and other materials. F-W-S

326-518 MASS COMMUNICATION IN AMERICAN SOCIETY. 3 Cr. History, social implications, and future of the mass media of communications. Prerequisite: 326-102 or 326-112. F-W

326-525 ADVANCED TECHNICAL WRITING. 3 Cr. Designed to give students experience in writing technical articles, and to acquaint them with the requirements for publication in professional media. Students will be expected to research, write, and submit individual projects of suitable length and maturity. These projects must be connected with the student's area of specialization. Prerequisites: 326-515, 326-516, or consent of instructor.

326-541 PSYCHOLINGUISTICS. 3 Cr. A study of linguistics behavior and the psychological processes responsible for it. Prerequisites: 326-102, 326-112. W

326-546 RESEARCH REPORTING. 2 Cr. Effective organization and presentation of individual research. Prerequisites: 326-102, 326-112.

354-530 STATISTICAL METHODS. 3 Cr. Histograms, mean and standard deviation, combinatorics, probability, binomial, hypergeometric, normal, chi-square, T, and F distributions and their uses. Statistical inference. Contingency tables, linear models, analysis of variance, with appropriate applications. Prerequisite: 355-120 or equivalent. F-W

354-531 DESIGN OF EXPERIMENTS. 2 Cr. Linear and curvilinear regression, single-factor designs, confidence ellipsoids for means, blocking, Latin and other squares, factorial designs. Prerequisite: 354-332 or consent of instructor. F

354-532 DESIGN OF EXPERIMENTS II. 2 Cr. Fixed-effect, random effect, and mixed models, nested and nested-factorial designs, split-plot designs, confounding in blocks, analysis of convariance, response surfaces, sequential analysis. Prerequisite: 354-531. W

354-590 TOPICS. 1, 2 or 3 Cr. Topics of current importance in the applications of mathematics to problems in business, industry, government or society. May be repeated for additional credit with consent of the program director.

354-640 COMPUTER USE IN EDUCATION. 3 Cr. Use of the computer in administrative, research, and instructional aspects of education.

354-741 COMPUTER PROGRAMMING TECHNIQUES. 2 Cr. Introduction to computer systems and their utilization. Emphasis on translating language with application to individual research projects, statistical or developmental. Not open to students who have completed 354-141. F-W-S

365-500 PHILOSOPHY OF TECHNOLOGY. 3 Cr. After a brief discussion of the scientific method and of the interface between science and technology, the student will be introduced to the following problems: the nature and definition of technology; the philosophical implications of technology for man, for human values, for human knowledge and for human society. The course will culminate in the student's philosophical assessment of technology's possible and probable impacts on the future of man.

365-550 ETHICAL VALUING. 2 Cr. Inquiry into valuing as a human activity including a study of ethical value bases, of value clarification and application processes and of student-designed valuation problems.

365-552 APPLICATIONS IN VALUING. 1 Cr. Student-designed valuing project in professional area other than education utilizing value theory, value perspectives and value process studied in 365-550. Prerequisite: 365-550.

372-518 MICROPROCESSORS AND APPLICATIONS. 3 Cr. Equipment, interfacing, and programming for microprocessor systems. Prerequisite: 10 credits in lab-based physics or electronics and 2 credits in computer programming (or equivalent competencies). W-S

372-527 PHYSICAL ELECTRONICS. 3 Cr. Theory and application of semi-conductors, vacuum and gas tubes. Basic principles of electronic circuits. Prerequisites: 355-153, 372-221, and 110-240 or 110-244. W

372-529 ATOMIC AND NUCLEAR PHYSICS. 3 Cr. Elements of atomic and nuclear physics and the industrial application of atomic energy. Prerequisites: 372-223, 355-153. F

372-531 STATICS. 3 Cr. Essential elements of statics including simple force system, theory and application of nonconcurrent forces, couples, friction, noncoplanar forces, trusses, and other structures. Prerequisites: 372-221, 355-153, and 354-141. F

372-533 DYNAMICS. 3 Cr. Essential elements of dynamics including rectilinear, angular, and harmonic motions; forces producing motion, work, energy, acceleration, impulse and momentum. Prerequisite: 372-531. W

372-535 ELECTROMAGNETIC RADIATION AND OPTICS. 3 Cr. The properties of electromagnetic radiation are introduced, both from the standpoint of physical optics and also from the viewpoint of radiation from an antenna system. The close relationship between these two approaches is stressed. Prerequisites: 372-223, and one year calculus. F-W

372-537 ELECTRICITY AND MAGNETISM. 3 Cr. The properties of electric and magnetic fields in free space and in material media. Prerequisites: 372-221, 355-154. F-W

372-705 CLASSICAL PHYSICS IN INDUSTRY. 3 Cr. Selected topics in classical physics are studied. Emphasis is placed on topics that have important industrial applications. Prerequisite: 372-221.

372-706 MODERN PHYSICS IN INDUSTRY. 3 Cr. Selected topics in modern physics are studied. Emphasis is placed on topics that have important industrial applications. Prerequisite: 372-221.

387-525 SOCIOLOGY OF LEISURE. 3 Cr. An institutional approach to the effects of leisure on social structure; the values reflected in leisure; problems attending the increase in leisure resources. Prerequisite: 387-110. W

387-530 SOCIOLOGY OF THE COMMUNITY. 3 Cr. Structure of the community, chiefly in the U.S. Variability and current trends; research techniques; community development. Prerequisite: 387-110. F

387-540 SOCIOLOGY OF WORK. 3 Cr. Human behavior in various types of employment and occupations; trends in the occupational structure of the U.S. Prerequisite: 387-110. W

387-560 SOCIOLOGY OF JUVENILE DELINQUENCY. 3 Cr. Definitions and trends of deviant behavior among youth; research findings; efforts toward prevention, control, and treatment. Prerequisite: 387-110. F-W

387-575 SOCIOLOGY OF MINORITY GROUPS. 3 Cr. Social-psychological aspects of the inter-action between majority and minority groups; trends of minorities in the United States. Prerequisite: 387-110.

387-710 SOCIOLOGICAL FOUNDATIONS FOR GUIDANCE. 3 Cr. A sociological perspective will be briefly introduced (or, re-introduced), applied to an examination of certain problems of modern society relevant to the practice of the guidance counselor, and finally, directed to an analysis of the social role of the guidance counselor. W

391-508 SPEECH SKILLS FOR BUSINESS AND INDUSTRY. 2 Cr. Teaching in technical speaking; projects emphasizing the application of speech skills and activities in business and industry. Prerequisite: 391-100. F-W-S

391-512 SPEECH SKILLS FOR EDUCATORS. 2 Cr. Application of leadership techniques and speech skills in classroom and educational activities. Prerequisite: 391-100. F-W-S

391-514 INTERVIEWING. 1 Cr. Principles and techniques of interviewing for the interviewer and interviewee in both the information and the employment interview. Prerequisite: 391-100. W

391-554 TELEVISION PROGRAMMING AND PERFORMANCE. 3 Cr. Planning, writing, and performing in instructional, public service, special feature, or dramatic television programs. Programs will be produced in cooperation with students in 600-593 Television Production Techniques. Prerequisite: 391-100. F-W

EDUCATION

413-501 INTRODUCTION TO GUIDANCE. 2 Cr. An overview of policies and practices of organized guidance programs in educational settings. Emphasis is given to historical, philosophical, and cultural bases for guidance services; guidance techniques for teachers; and cooperative efforts of teachers, parents and counselors. F-W-S

413-629 GUIDANCE IN THE ELEMENTARY SCHOOL. 2 Cr. The nature and conditions of guidance in the elementary school. Curricular and noncurricular guidance techniques, referrals, and parent counseling. Recommended principles and practices in guidance applied to the elementary school child. F-S

413-634 TECHNICAL-VOCATIONAL EDUCATION STUDENT. 2 Cr. Review of characteristics of vocational and technical students as it affects their social, physical, emotional and intellectual development in the transition from adolescence to young adulthood. Implications for guidance, counseling, and vocational education.

413-647 BEHAVIOR PROBLEMS OF CHILDREN. 2 Cr. Understanding the psychological, social and environmental factors which contribute to the developing child's behavior. Primary emphasis is on the cause and treatment of behavioral disorders in children three through twelve. Included: methods of observing, diagnosing, documenting and interpreting, and underlying behavioral dynamics of problem children. Prerequisites: 479-730, 479-760 or consent of instructor. W-S

413-648 LEARNING DISABILITIES IN YOUNG CHILDREN. 2 Cr. Stresses early recognition, through observation and use of screening instruments, of general and specific developmental delays in the young child, and programming to maximize readiness for academic learning. W-S

413-655 HUMAN RELATIONS IN THE COMMUNITY. 2 Cr. Consideration of the social, psychological, medical, physical, spiritual and interpersonal aspects of growing into responsible adulthood.

413-675 COUNSELING THEORY. 2 Cr. The examination of theoretical approaches to counseling, including psychoanalytic adaptation, behaviorism, trait-factor, client-centered and other approaches. Each approach is examined concerning the nature of man, the underlying personality theory, goals of counseling, the role of counselor, and illustrative practical applications. The major objective of the course is to develop a beginning personal theory of counseling. Prerequisite: 413-501. F-W-S

413-681 PSYCHOLOGY OF READING. 2 Cr. A multi-sensory approach to reading development and the remediation of reading disorders.

413-690 APTITUDE AND ACHIEVEMENT APPRAISAL. 2 Cr. Selection, interpretation, and use of tests and inventories for teachers and counselors. Study of achievement, aptitude, interest and personality tests with experience in the interpretation of results. (Quarter) Prerequisite: 413-501 or 413-629 or 212-264.

413-691 THEORIES OF CAREER DEVELOPMENT. 2 Cr. A study of the psychology of work including career development, the meaning of work, job satisfaction and factors in career choice. Prerequisite: 413-501. W-S

413-700 SEMINAR IN COUNSELING AND PSYCHOLOGICAL SERVICES. 1-2 Cr. Special topics on current developments in the field. Each seminar is devoted to a specific development to be indicated with a sub-title and description.

413-705 PLAY THERAPY. 2 Cr. A survey and study of play therapeutic techniques. Observation and supervised experiences. Prerequisites: 479-730, 479-760. F-W-S

413-711 INTRODUCTION TO STUDENT PERSONNEL SERVICES. 2 Cr. Critical examination of the history, philosophy and status of student personnel services in American colleges and universities. Particular attention is focused on student activities, residence programs, college counseling and advising, financial aids and records.

413-731 PROBLEMS IN COUNSELING AND PSYCHOLOGICAL SERVICES. 2 Cr. Plan B investigations are the primary purpose of this course. Students who are ready to write their Plan B paper should register for this course and then confer with the major advisor to select a staff member who will serve as an investigation advisor. Meetings with the advisor are by arrangement only. Prerequisites: Twelve hours of graduate credit in an appropriate program sequence, including 421-740, or consent of instructor. F-W-S

413-733 CAREER DEVELOPMENT PROCESS AND ISSUES. 2 Cr. Career development concepts, theories, and related social issues that affect peoples' career choices. W-S

413-733A CAREER INFORMATION LABORATORY. 1 Cr. Laboratory experience with print and nonprint occupational, educational and personal information; assessment instruments; and instrument and program evaluation techniques. Prerequisite: 413-733. W-S

413-735 THE INFORMATION SERVICE AND VOCATIONAL GUIDANCE. 2 Cr. This course is designed to acquaint the student with occupational, educational and personal-social information, sources of materials and methods of evaluation. Prerequisite: 413-691.

413-736 AMERICAN COLLEGE STUDENT. 2 Cr. Social, emotional, physical, and intellectual development in the transition from adolescence to young adulthood. Implications for student personnel services including guidance, counseling and college orientation.

413-737 CURRICULUM AND METHODS IN CAREER EDUCATION. 2 Cr. A course designed to provide the student with knowledge of and techniques in organizing, administering and teaching a formal guidance curriculum in the school system (K-12); investigation of ways to incorporate occupational, educational and personal-social information into the school curriculum; development of course outlines and curriculum; methods of working with students in personal, vocational and educational planning are investigated. Prerequisites: 413-691, 413-735. W-S

413-741 INDIVIDUAL MENTAL TESTING. 2 Cr. Theory of mental measurement through use of individual assessment procedures. Using individual mental testing for guidance purposes. Introduction to administration of Stanford-Binet, the three Wechsler instruments (WPPSI, WISC and WAIS) and other usable procedures. This course does not qualify a student for the administration of individual mental tests.

413-743 ADVANCED INDIVIDUAL MENTAL TESTING. 2 Cr. An experience of supervised practice in the administration, scoring, and interpretation of individual tests of mental ability. Emphasis is directed toward the use of such evaluation of intelligence to case history material, the integration of related psychological findings, the determination of prognosis, and planning for the individual client. Prerequisite: 413-741. W-S

413-744 PSYCHOMETRIC AIDS TO MARRIGE AND FAMILY COUNSELING. 2 Cr. Instruction and practice in the administration and interpretation of tests appropriate for this area. Practice in treatment application of test results. Prerequisite: 489-753. F

413-745 ASSESSMENT OF PERSONALITY (PROJECTIVE TECHNIQUES). 2 Cr. History, theory and methodological consideration and studies of projective instruments. Instruction in administration, scoring, and interpretation of some currently used devices leading to a knowledgeable understanding of the instruments. Prerequisites: 413-743, 413-748. W-S

413-748 INTRODUCTION TO DIAGNOSIS AND REMEDIATION OF LEARNING DISABILITIES. 2 Cr. Diagnostic and remedial approaches to learning difficulties in educational settings. Prerequisite: 413-741.

413-750 APPRAISING THE INDIVIDUAL. 2 Cr. The case study approach to synthesis of test and non-test appraisal data. Prerequisite: 413-501. S

413-752 GROUP DYNAMICS. 2 Cr. A study of group approaches for providing guidance services to pupils. Designed to help counselors and teacher-counselors understand how groups may be used as a setting for guidance and counseling. Prerequisites: 413-501, 413-675. F-W-S

413-760 THEORIES AND TECHNIQUES OF BEHAVIOR MODIFICATION. 2 Cr. Theoretical and empirical bases for utilizing behavior modification procedures in schools, clinics and other institutions. Emphasizes role of behavioral consultant. Prerequisite: 479-530 or 479-730 or equivalent. F-W-S

413-765 ORGANIZATION AND ADMINISTRATION OF GUIDANCE. 3 Cr. Organizational and administrative techniques for providing effective school guidance services in K-post secondary programs. Prerequisite: 413-675. W-S

413-768 ADVANCED DIAGNOSIS AND REMEDIATION OF LEARNING DISABILITIES. 2 Cr. Develops expertise in understanding human information processing, the administration and interpretation of sophisticated psychological diagnostic instruments, and the prescription of appropriate and precise remediation. Current research in learning disabilities is examined and evaluated. Prerequisite: 413-748.

413-770 THESIS. 2-6 Cr. Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major advisor. F-W-S

413-787 CAREER PLACEMENT SERVICES. 1-3 Cr. Development of a community/school-based placement system for schools, post-secondary schools, and/or agencies. May be taken for 1-3 credits and may be repeated once with consent of instructor, if taken for less than 3 credits. W-S

413-788 COUNSELING PROCESS LABORATORY. 2 Cr. Basic attending and influencing skills used in the one-to-one and one-to-group situations involving laboratory experiences, such as counseling, feedback, critiquing, modeling, assessing and evaluating. F-W-S

413-790 SUPERVISED COUNSELING PRACTICUM. 2-4 Cr. A minimum of 120 hours of closely supervised counseling experience through a series of interviews with selected counselees. Prerequisite: Consent of instructor. F-W-S

413-791 INTERNSHIP IN GUIDANCE AND COUNSELING. 8 Cr. The student will devote a minimum of 360 clock hours (each quarter) in a local school serving as a school counselor. In this experience, he will be supervised by university personnel and work with a fully certified local school counselor. Experiences include all aspects of the guidance function. This course may be repeated. F-W

413-793 MARRIAGE AND FAMILY COUNSELING PRACTICUM I. 4 Cr. Preparation for professional marriage and family counseling services through seminar discussion, observation, and supervised counseling experience. Prerequisites: (1) personal screening and approval by instructor of admission without deficiency to the proposed program in Marriage and Family Counseling, (2) concurrent registration in 212-793 — Marriage and Family Counseling Practicum, (3) commitment to the second semester sequel - enrollment in 413-794 and 212-794. F-W

413-794 MARRIAGE AND FAMILY COUNSELING PRACTICUM II. 4 Cr. Sequel to 413-793. Continuing preparation for professional marriage and family counseling services through seminar discussion, observation, and supervised counseling. Prerequisites: (1) successful completion of 212-793 and 413-793, (2) concurrent registration in 212-794 — Marriage and Family Counseling Practicum. F-W

413-795 MARRIAGE AND FAMILY COUNSELING PRACTICUM. 1-2 Cr. The study and application of family theory in a clinical setting. Prerequisite: Acceptance into M.S. Degree Program in Marriage and Family Counseling or permission of the program director. S

413-800 FIELD STUDY. 6 Cr. Experience in action type field research in pupil personnel services. The student will identify and research a topic directly related to his career position. Preparation and presentation of a formal report of the study to appropriate personnel. F-W-S

413-865 ORGANIZATION AND ADMINISTRATION OF PUPIL PERSONNEL SERVICES. 2 Cr. A study of the pupil personnel services staff in terms of unique, related and integrated functions. Review of organizational and administrative relations and structures of pupil services. Field experiences designed to promote the growth and understanding of students desiring to become system or district directors of pupil services. Prerequisite: 413-765.

413-890 MULTIPLE COUNSELING AND SENSITIVITY TRAINING. 2 Cr. A laboratory experience in the analysis and application of group dynamics and group behavior as related to attitude and behavior change. The origin of conflict, cooperation and misunderstanding within groups. Developing insight and sensitivity towards the student's own attitudes towards other people and their own motivation and value systems in human relations. Prerequisite: Advanced graduate standing.

413-892 ADVANCED COUNSELING PRACTICUM. 2 Cr. Clinical supervised counseling experiences in a variety of school institutional and agency settings. Designed to assist the student to more adequately understand and apply the dynamics of human behavior in the one-to-one counseling relationship. A minimum of 60 to 90 clock hours of experience is required. Prerequisite: 413-790. F-W-S

413-895 SUPERVISION OF COUNSELORS AND COUNSELING. 2 Cr. Practical applied experiences in the supervision of counseling and counselors; investigation, analysis and application of the psychology of learning and helping as the supervisor assists other personnel services staff in their professional and personal growth and development. Prerequisite: 413-790.

416-701 ISSUES IN VOCATIONAL DISTRIBUTIVE EDUCATION. 2 Cr. An in-depth study of contemporary issues confronting vocational distributive education. Possible solutions or alternatives will be proposed. S

416-702 IMPROVEMENT OF METHODS AND MATERIALS IN DISTRIBUTIVE EDUCATION. 2 Cr. Identification and analysis of instructional needs; design of instructional alternatives; selection and development of instructional packages; and the evaluation and validation of the resulting products in terms of student learning. S

421-505 HISTORY OF EDUCATION. 2 Cr. Elementary, secondary and higher education in the U.S. from the early colonial period to the present time.

421-522 SECONDARY EDUCATION SEMINAR. 2 Cr. For post-student teaching, discussion of the evaluation, status, and trends of secondary education. The experiences of the students' teaching related to the needs of our democratic society; philosophy, organization, problems, curriculum development, and the responsibilities of the individual teacher. F-W

421-525 FUNDAMENTALS OF NATIVE AMERICAN EDUCATION. 3 Cr. An introduction to the major issues related to American Indian education including pupil-teacher relationships, teacher-community relationships, curriculum and school organizations.

421-541 CLASSROOM EVALUATION. 2 Cr. Types of tests and test questions; the interpretation of test scores and grades by means of simple statistical procedures; methods of grading manipulative work and assigning final grades.

421-551 VALUES CLARIFICATION SKILLS FOR EDUCATORS. 2 Cr. Valuing process and values clarification techniques applied in education. Prerequisite: 365-550 or equivalent. W

421-590 MENTAL HEALTH IN THE SCHOOLS. 2 Cr. A study of the total school community in terms of factors and dynamics contributing to the development or hindrance of the mental health of students, staff, administration and parents. F-W-S

421-623 CONTRACT AS A TEACHING-LEARNING TOOL. 1-3 Cr. Historical antecedents and current developments in the use of the contract idea as a part of the educational process. Emphasis will be on the development of learning contracts for on-the-job utilization.

421-641 EDUCATIONAL EVALUATION. 2 Cr. Testing; the interpretation

of tests by means of simple statistical procedures; methods of evaluating educational programs. F-W-S

421-650 DRUG EDUCATION FOR TEACHERS. 2 Cr. A series of learning experiences designed to provide educational personnel with pertinent information, knowledge and data concerning the nature, use and abuse of drugs in contemporary society. The course is designed to review the contemporary drug scene and provide educators with insight concerning the problem as well as alternative solutions to this problem.

421-670 CONFERENCE LEADING. 2 Cr. Study of teaching. Study and practice of the principles and techniques of conference leading assan instructional device in vocational education. Prerequisite: 421-205 or equivalent.

421-681 AMERICAN HIGHER EDUCATION. 2 Cr. An introduction to the ramifications of the American system of higher education including history, philosophy, administration, curriculum, students, teachers, and demands for employment. Undergraduates by permission of the instructor only.

421-682 READING METHODS-SECONDARY SCHOOL. 2 Cr. Technical information on the reading process, self-concept and reading, and specific classroom reading problems. Construction of Directed Reading Activities, Informal Reading Inventories, Reading Study Guides, readability checks, SQ32 study skills, vocabulary development and comprehension materials. F-W-S

421-685 PSYCHOLOGY OF ADULT EDUCATION. 2 Cr. A global view of the philosophy, purpose and practice in various programs of adult education, and an examination of the characteristics of the adult learner plus a profile of his ego, intelligence, and development. S

421-690 THE EDUCATIONAL SCIENCES. 2 Cr. An introduction to the educational sciences, including cognitive mapping. Emphasis is placed on the practical application of the educational sciences in an educational setting. W

421-700 PHILOSOPHY OF MODERN EDUCATION. 2 Cr. A comparative study of the main schools of educational philosophy and of their influence in contemporary education, thought, and practice; points of agreement and of conflict. F-W-S

421-702 PRINCIPLES OF SUPERVISION. 2 Cr. Basic principles, types, functions, organizations and plans of supervision. Interpretation and application of creative supervision plans; individual and class projects concerned with applied methods of supervision in selected educational areas. F-S

421-705 SOCIAL THOUGHT OF AMERICAN EDUCATORS. 2 Cr. The school as a social institution within American democracy. Contributions of the past to education and current philosophies. Historical review, evaluation and consideration of the public school as a social institution. W-S

421-706 PROBLEMS OF SUPERVISION. 2 Cr. Introduction to the scope of literature in the field of educational administration and supervision. Acquaints the student with research on, and specific areas in which supervisory problems arise, and develops in the student the ability to apply research to the solution of specific problems in supervision. Prerequisite: 421-702. W

421-714 TEACHING STRATEGIES. 4 Cr. Intensive study and practice in mediating the learning process. Focus on the individual teacher and his active role as an instrument which can bring about predictable changes in student cognitive behavior. Minor consideration given to affective and psychomotor behavior. Lecture, discussion and micro-teaching. F-W-S

421-726 ADMINISTRATION. 2 Cr. Philosophy and principles underlying organization and operation of public education on the local, state and national levels in the United States. Examinations of prevailing practices and current problems of school management. W-S

421-727 SUPERVISION OF STUDENT TEACHERS. 2 Cr. Purpose and philosophy of supervision, the role of the cadet center in preparing teachers, relationships and responsibilities of persons involved, orientation, guidance and evaluation of student teachers. S

421-733 SURVEY PROCEDURES. 2 Cr. Procedures and organization for conducting surveys. Application of principles by making and writing the report of an actual survey. Prerequisite: 421-740. W

421-738 ELEMENTARY SCHOOL CURRICULUM. 2 Cr. A study of the social, psychological, cultural, economic, and educational forces operating to bring about changes in the curriculum of the elementary school, K-8. Outstanding state and local curriculum construction programs. Observation and evaluation of the modern elementary school curriculum trends and innovations. Review of curriculum development. S

421-739 HIGH SCHOOL CURRICULUM. 2 Cr. A study of the social, psychological, cultural, economic and educational forces operating to bring about changes in the curriculum of the secondary school. Outstanding state and local curriculum construction programs. Observation and evaluation of the modern high school curriculum, trends and innovations. Review of curriculum development. S

421-740 RESEARCH FOUNDATIONS. 4 Cr. This course serves as an introduction to basic concepts and principles in educational research. The course utilizes mastery grading and elements of individualized instruction. The course functions to help prepare the student for his own graduate research experiences and also to prepare him to be an articulate consumer of research upon completion of the course. F-W-S

421-741 DESIGN AND EVALUATION OF CURRICULUM. 4 Cr. The student will use a systems approach cycle to develop a curriculum design for a real or simulated problem situation which requires state level and local level planning.

421-742 PROGRAM EVALUATION. 3 Cr. Surveys theory and practice of evaluating the effectiveness of a variety of human-service delivering systems, including education. Develops applied competencies in analyzing values and needs of decision makers and articulation and assessment of program objectives (both process and product). Emphasis on building efficient, ongoing evaluation systems. W-S

421-744 SEMINARS IN EDUCATION. 2 Cr. Special topics on current developments in the field. Each seminar devoted to a specific development to be indicated with a subtitle and description.

421-750 CURRICULUM THEORY AND PRACTICE. 2 Cr. A study of curriculum theory and its application. An analysis and development of a rationale, writing educational objectives, identifying a body of knowledge, specifying methodology, and conducting curriculum evaluation. F-W-S

421-761 EDUCATIONAL STATISTICS. 2 Cr. Methods of using statistics in problems commonly faced by teachers and administration in grading, interpreting student data and making reports and requests. Emphasis on understanding basic concepts and their application in practice. This course will not duplicate 421-740 which deals with research statistics.

421-811 STRUCTURING KNOWLEDGE. 2 Cr. Study of methods for structuring knowledge. Relationships between the structure and its application. Structure of knowledge, discipline and curriculum relationships. Prerequisite: Acceptance in Educational Specialist program. F-S

421-816 INSTRUMENTATION FOR RESEARCH. 3 Cr. Basic concepts in the areas of validity and reliability will be studied and applied to the design of instruments. Emphasis will be placed on conceptualizing the constructs or characteristics to be measured. Techniques of item writing, item analysis, determining reliability, and scaling will be covered, including such ideas as acquiescent set, item difficulty, and discrimination. The student will engage in the study of procedures and techniques for gathering, analyzing, and reporting data and findings as applied to his proposed field study. F-S

421-830 EDUCATIONAL ADMINISTRATIVE BEHAVIOR. 3 Cr. The course will cover the history of the development of administration and the use of theory in the study of organizations, the application of theory to the study of administrative behavior and the school as a social system including the study of the elements of leadership, organizational change, and a review of current and emerging concepts in administrative behavior.

421-841 BASIC RESEARCH DESIGN. 3 Cr. Analysis of data and measures of reliability of results. Emphasis on methods applicable to research by means of experiments. Design of experiments to secure maximum information from the research. A thorough elementary discussion of the basic ideas in experimental design. Prerequisite: 421-740.

421-862 INFERENTIAL STATISTICS. 3 Cr. Probability and statistical inference. The general value of the standard error and hypotheses testing. Emphasis on the foundation of analysis of variance and the factorial analysis of variance with three or more variables. The inferential statistics course is organized to acquaint the student with the theoretical bases and the applications of analysis of variance for research problems. Prerequisite: 421-740.

421-863 SAMPLING TECHNIQUES. 3 Cr. The basic sampling model for equal probability selection; basic sampling methods. Simple and stratified random sampling. Generalizations of the basic sampling model. Common applications of the general theory. Estimations of sample size. The basic sampling techniques course is organized to provide the tools necessary for understanding sampling theory and for drawing representative samples from identified populations. Prerequisite: 421-740.

421-890 FIELD STUDY IN PROFESSIONAL EDUCATION. 2-6 Cr. Supervised study which provides the graduate student with the opportunity to: (1) explore in depth the body of knowledge associated with a selected problem in professional education, (2) provide an educational experience for implementing this knowledge into a selected institutional setting, and (3) devise methods to determine if the implementation is or will be successful. Prerequisite: Approval of director of the major.

431-501 LEARNING DISABILITIES. 3 Cr. Identification, remediation, and evaluation of the learning disabled, emphasizing intervention techniques used with adolescents and adults.

431-532 PSYCHOLOGY OF THE EXCEPTIONAL CHILD. 2 or 3 Cr. Guidance of the learning and development of children who deviate from the normal, the mentally retarded, gifted, socially and emotionally disturbed, and those with visual, speech and orthopedic problems. (Quarter or Semester) F-W-S

431-555 ISSUES IN SPECIAL EDUCATION. 2 Cr. Acquaintance with current and controversial issues in special education. Prerequisite: 431-185, 479-562. W

431-560 EDUCATION OF HANDICAPPED YOUTH: METHODS AND MATERIALS. 3 Cr. Design, development and content of curriculum for secondary educable mentally retarded (EMR) students; materials and methods of presentation. Prerequisites: 431-185, 479-562. F

431-561 EDUCATION OF HANDICAPPED YOUTH: EDUCATIONAL MANAGEMENT. 3 Cr. A systematic approach to develop skills to diagnose, teach and organize special education programs. Instructional activities are designed to develop in students the requisite skills to ameliorate behavior and learning problems of handicapped youth. Prerequisites: Instructor's permission and concurrent enrollment in 431-560 and 431-562. F-W-S

431-562 CLINICAL EXPERIENCE WITH HANDICAPPED YOUTH. 2 Cr. On-campus work and study experiences in educational settings with handicapped youth. This course may be repeated. Prerequisite: Instructor's permission and concurrent enrollment in 431-560 and 431-561. F-W-S

431-581 LEGAL RIGHTS OF HANDICAPPED. 2 Cr. Current litigation, civil commitment, criminal proceedings, federal and state statutes, and civil rights regarding the handicapped student and adult. Prerequisite: 431-185 or 479-562.

431-585 INTRODUCTION TO MENTAL RETARDATION. 2 Cr. An introduction to the etiology of mental retardation; the psychological, educational, social, and vocational aspects; and adjustment techniques used in working with mentally retarded persons. F-W

431-630 MAINSTREAMING SPECIAL STUDENTS. 3 Cr. This course examines the characteristics of those students who are slow learners due to below average intelligence, learning disabilities, cultural and social differences, emotional problems, and other causes, and considers the implications for educational practice. Prerequisite: Senior or Graduate standing. F-W-S

431-660 PRACTICUM IN SPECIAL EDUCATION. 2 Cr. Off-campus work and study experiences in educational settings with handicapped youth. This course may be repeated. Prerequisites: Instructor's permission and concurrent enrollment in 431-661 and 431-662. F

431-661 CAREER EDUCATION FOR HANDICAPPED YOUTH. 3 Cr. Techniques for interviewing, planning, and directing school programs of career choice with handicapped adolescents. Class activities will include community job surveys, work placement and work supervision. Prerequisite: 431-660. F

431-662 CLASSROOM MANAGEMENT TECHNIQUES. 3 Cr. Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance the learning of pupils. F-W-S

459-505 SIGN LANGUAGE I. 3 Cr. Basic course in manual communication with the deaf. Intensive practice in expressive and receptive communication. Prerequisite: 459-201. F

459-506 SIGN LANGUAGE II. 3 Cr. Intermediate course in manual communication with the deaf. Emphasis on American Sign Language and increasing sign vocabulary and communication speed. Prerequisite: 459-505. W

459-520 REHABILITATION OF THE CHEMICALLY DEPENDENT. 3 Cr. This course involves the vocational rehabilitation of alcohol and drug misusers for rehabilitation and educational personnel. Emphasis is on information about the current drug and alcohol scene and the development of communication skills to provide abusers with alternate non-addictive life styles which includes vocational rehabilitation. Prerequisite: 459-101 or consent of instructor. F-S

459-585 THE REHABILITATION OF THE MENTALLY RETARDED. 2 Cr. Orientation to the field of mental retardation with particular emphasis to vocational evaluation, adult education, and adjustment techniques used with mentally retarded adults. F-W-S

459-610 PSYCHOLOGICAL TESTING WITH HANDICAPPED PEOPLE. 2 Cr. An introduction to psychometric tests. Administration, interpretation/scoring, and application to handicapped populations. Prerequisite: 459-201. F-W-S

459-680 PRINCIPLES OF REHABILITATION COUNSELING. 3 Cr. An introduction to the principles of rehabilitation counseling and their application to the total rehabilitation process. Emphasis is on the principles and the procedures practiced in the state-federal system of vocational rehabilitation.

459-682 SEXUALITY AND THE DISABLED. 2 Cr. Programs in sexuality,

terms and techniques, exploration of personal biases and development of techniques for dealing with sexuality of disabled individuals. Prerequisites: 459-330, 459-680 or graduate standing.

459-685 GROUP PROCESSES IN REHABILITATION SETTINGS. 2 Cr. Theory and application of group processes in rehabilitation settings. Lecture will focus on theory and application and the weekly laboratory exercises will provide student with direct experience as a member and facilitator of a group. Prerequisite: 459-761. F-W-S

459-700 SEMINAR - VOCATIONAL REHABILITATION. 1-2 Cr. A seminar course devoted to the field of vocational rehabilitation and subject materials pertinent to the field. May be repeated. F-W

459-701 INTRODUCTION TO VOCATIONAL REHABILITATION. 2 Cr. History, philosophy, legislation, concepts and processes of vocational rehabilitation and vocational evaluation.

459-703 PHYSICAL DISABILITY AND WORK. 3 Cr. Study of physical disabilities and their vocational implications. F-W

459-704 LABORATORY IN WORK ADJUSTMENT. 1 Cr. A supervised, practical laboratory experience in work adjustment interviewing, behavioral observation and recording techniques, adjustment planning and report writing. Prerequisite: 459-724. F-W-S

459-705 PRACTICUM IN REHABILITATION COUNSELING. 2 Cr. This course is designed to provide supervised practice in rehabilitation counseling within either district office of the Division of Vocational Rehabilitation or within a rehabilitation facility. Prerequisite: Permission of instructor.

459-706 LABORATORY IN WORK EVALUATION. 2 Cr. Laboratory experiences in the procedures and specific techniques of work evaluation. The course is normally taken in conjunction with the lecture course on work evaluation, 459-723 Procedures of Work Evaluation. F-W-S

459-707 PRACTICUM IN WORK EVALUATION. 4 Cr. A supervised practicum experience in the Evaluation and Training Center. The course is designed to provide integration of course material and practical application in working with disabled and disadvantaged clients. Prerequisite: 459-723. F-W-S

459-709 PRACTICUM IN WORK ADJUSTMENT. 3 Cr. Prerequisites: 459-724, Supervised practical experience in work adjustment; application of the techniques of work adjustment to the problems of clients in a rehabilitation facility. F-W-S

459-717 OCCUPATIONAL ANALYSIS AND INFORMATION. 2 Cr. Classification of occupations based on different criteria, methods of obtaining occupational information, methods of job analysis and establishment of worker requirements. Emphasis on the needs, abilities and limitations of disabled persons. F-W

459-723 PROCEDURES OF WORK EVALUATION. 3 Cr. Procedures of evaluating skills, aptitudes, dexterities,

motivation, behavior work habits, tolerances in specific abilities or deficits of the handicapped. Methods of report writing. Review of research on work evaluation. Field trips to rehabilitation facilities in industries. F-W-S

459-724 PROCEDURES OF WORK ADJUSTMENT. 2 Cr. Methods of affecting adjustment in the work personality of the handicapped, concerning such factors as effective work habits, motivational habits, attitude, and responsibility. Methods of job training in rehabilitation facilities. Methods of effective workshop management. Field trips to rehabilitation facilities and industries. F-W-S

459-738 PSYCHOLOGICAL DISABILITY AND WORK. 2 Cr. Etiology, diagnosis, treatment, prognosis and vocational implications of psychiatric disabilities, mental retardation, and brain damage. F-W

459-755 PROBLEMS IN VOCATIONAL REHABILITATION. 2 Cr. Identification, selection and completion of a problem in the specialization area of vocational evaluation. The problem project will culminate in a Plan B Paper. Prerequisite: Vocational Rehabilitation major and 421-740. F-W-S

459-761 COUNSELING TECHNIQUES. 2 Cr. Study of different theories and approaches to counseling practice. Emphasis is on the techniques applicable to working with handicapped persons in rehabilitation facilities. F-W-S

459-769 BEHAVIOR CHANGE TECHNIQUES WITH HANDICAPPED PEOPLE. 2 Cr. Review and application of research findings to the practice of work adjustment. Prerequisite: 459-724. F-W

459-770 THESIS — VOCATIONAL REHABILITATION. 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major advisor.

459-780 ADMINISTRATION IN VOCATIONAL REHABILITATION. 2 Cr. A lecture course covering the administrative aspects and methods involved in establishing and supervising a vocational evaluation unit or a total rehabilitation facility. Prerequisite: Vocational Rehabilitation major or permission of instructor. F-W-S

459-783 INTERNSHIP IN WORK EVALUATION. 4-8 Cr. Supervised ten-week field practice in the techniques of vocational evaluation and work adjustment procedures. To be completed at selected vocational rehabilitation facilities capable of offering the student an adequate training experience. F-W-S

459-785 INTERNSHIP IN REHABILITATION COUNSELING. 4-8 Cr. Supervised field practice in the methods and process of rehabilitation counseling. To be completed at selected rehabilitation agency capable of providing an appropriate field experience. Prerequisite: Approval of major director.

459-789 INTERNSHIP IN WORK ADJUSTMENT. 6 Cr. Supervised practical experience for practitioners/coordinators of work adjustment services. Prerequisites: 459-709, advanced graduate standing, and approval of instructor. F-W-S

469-502 PRINCIPLES OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION. 2 Cr. Philosophy, organization and administration of vocational and adult education in the nation with special attention given to the Wisconsin program. F-W-S

469-534 TASK ANALYSIS. 2 Cr. Analysis techniques utilized in curriculum development. Emphasis on task analyses and related procedures. Includes occupational and needs analysis, competency identification, objective writing and information mapping. Integrates task analysis with a total system for developing and revising vocational curriculum or job training programs. F-S

469-546 SEMINAR: (TITLE TO REFLECT SPECIFIC VOCATIONAL EDUCATION CONTENT) 1, 2, or 3 Cr. Current topics in vocational/technical and adult education with application for personnel in the field. Prerequisite: Consent of instructor.

469-560 COOPERATIVE OCCUPATIONAL EDUCATION PROGRAMS. 2 Cr. Philosophy, organization, coordination and teaching techniques of cooperative education programs in the various vocational areas. Roles, responsibilities and duties of the cooperative teacher coordinator. Prerequisite: 469-502. F-W-S

469-608 ISSUES IN VOCATIONAL TECHNICAL AND ADULT EDUCATION. 2 Cr. An in-depth study of contemporary issues affecting vocational, technical and adult education. Possible solutions or alternatives will be proposed. S

469-611 INDIVIDUALIZED INSTRUCTION IN PRACTICAL ARTS AND VOCATIONAL EDUCATION. 2 Cr. This course in individualizing instruction offers an alternative to conventional methods, organization and evaluation of teaching. Especially helpful for teachers in vocational education and the practical arts. S

469-674 ADULT EDUCATION. 2 Cr. Philosophy and history of adult education movement in the United States. Technique of teaching adults including psychological factors, methods, adult interests and characteristics. S

469-710 COORDINATION. 2 Cr. Principles of coordination in vocational, technical and adult education, including apprenticeship training, office education, distributive education, home economics, trade and industrial education, health occupations, technical education, and adult education. Prerequisite: 469-502. S

469-736 PROBLEMS IN VOCATIONAL EDUCATION. 2 Cr. Identification, selection, and completion of a problem in Vocational Education culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

469-746 SEMINARS IN VOCATIONAL EDUCATION. 1-2 Cr. Special topics on current developments in the field. Each seminar devoted to a specific

development to be indicated with subtitle and description.

469-770 THESIS - VOCATIONAL EDUCATION. 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major advisor. F-W-S

469-773 PROBLEMS IN COORDINATION. 2 Cr. Identification, selection, and completion of a problem dealing with coordination of vocational, technical and adult education. Prerequisite: 469-710.

469-780 INTERNSHIP VOCATIONAL EDUCATION. 4-8 Cr. A planned, supervised experience for M.S. or Ed.S. candidates. To be completed at selected locations capable of providing appropriate experiences. Prerequisite: Approval of director of major and department chairperson. F-W

469-784 INTERNSHIP - LOCAL VOCATIONAL EDUCATION COORDINATOR. 4-8 Cr. Supervised field practice in local vocational education coordination. To be completed at selected schools or CESA agencies capable of providing appropriate experiences. Prerequisite: Approval of the director of the major. F-W

469-792 ADMINISTRATION OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION. 2 Cr. Vocational-technical and adult school operation, legal status, policy making staff personnel, student personnel, programs, public relations, physical plant, business management. Prerequisite: 469-710. S

479-530 PSYCHOLOGY OF LEARNING. 3 Cr. A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized. F-W

479-540 PSYCHOLOGY OF INDIVIDUAL AND GROUP DIFFERENCES. 3 Cr. Nature and extent of differences in individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes, and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied.

479-552 ADOLESCENT PSYCHOLOGY. 3 Cr. The physical, emotional, social, moral, and intellectual development of secondary school youth. Prerequisite: 479-110. F-W-S

479-561 ABNORMAL PSYCHOLOGY. 3 Cr. A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral is studied. F-W-S

479-570 ASSERTIVE TRAINING PROCEDURES. 2 Cr. Training in interpersonal behavior in which persons defend their legitimate rights without violating the rights of others. F-W

479-571 THE PSYCHOLOGY OF MARRIAGE AND THE FAMILY. 2 Cr. A study of the interpersonal relations involved in dating, mating, and family collaboration with growing awareness of patterns for self-integration. F-W

479-579 PUBLIC RELATIONS. 2 Cr. Introduction to public relations in industry and education including community relations, employee relations, customer relations, media relations, tools of public relations, two-way communications, and special publics. F-W-S

479-581 INDUSTRIAL PSYCHOLOGY. 2 Cr. A survey of the application of psychological principles of man's vocational pursuit. Emphasis is on individual differences and group behaviors which are involved in personnel selection, human factors, engineering, industrial safety, motivation, personnel training, and consumer behavior. Course material is based primarily upon the latest behavioral science research in the field of industrial psychology. Prerequisite: 479-110. F-W

479-582 PERSONNEL MANAGEMENT. 3 Cr. Organization and coordination of personnel practices and methods. Consideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation. F-W-S

479-632 PERCEPTION. 3 Cr. This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical techniques and conduct experimentation in human information processing. F-W

479-690 PSYCHOLOGICAL MEASUREMENT. 3 Cr. An introduction to the assumptions, models and applications of measurement techniques in behavioral science. Test analysis, item analysis, reliability, and validity are extensively covered. The course also introduces the student to prediction and measurement of attitudes and opinions. F

479-730 ADVANCED PSYCHOLOGY OF LEARNING. 2 Cr. The theories and principles of learning are studied with emphasis upon totalistic models of classroom learning. F-W-S

479-760 PERSONALITY. 2 Cr. The nature of personality and the conditions which make for its wholesome development, its maintenance, and integration is studied. Personality inventories used for self-analysis are also studied. F-W-S

479-779 ADVANCED PUBLIC RELATIONS. 2 Cr. Practice in planning and directing specific public relations programs, using the case problem approach.

479-850 PSYCHOLOGY OF DEVELOPMENT. 3 Cr. Investigation of individual man, his natures, and development with primary emphasis on the self and implications for education. Study aimed at analysis, synthesis, and evaluation levels through seminar approach. S

489-701 SEMINAR: SCHOOL PSYCHOLOGICAL SERVICES. 2 Cr. Introduction to the field of school psychology. Roles and functions of the school

psychologist are explored as they relate to Wisconsin and the nation: political and legal implication of these roles are identified. F

489-702 SEMINAR: ISSUES AND TRENDS IN SCHOOL PSYCHOLOGICAL SERVICES. 2 Cr. Legal, ethical, fiscal and administrative aspects of the school psychologist's position will be studied as seminar topics by school psychologists in advanced training or in field settings.

489-731 PROBLEMS IN SCHOOL PSYCHOLOGY. 2 Cr. Independent investigation into a carefully delineated area of school psychological services in an attempt to bring evidence to bear on a problem. The use of research techniques is required. Reporting of the study is expected to meet the standards appropriate to scholarly writing by professionals in the field. Prerequisite: 421-740. F-W-S

489-753 PSYCHOMETRIC THEORY AND APPLICATION. 2 Cr. Introduction to psychoeducational theory and concepts in relation to inter and intraindividual assessment. Covers basic statistics, in regard to test construction, test uses and misuses, test selection, purposes of testing, ethics, basic test interpretation processes and types of tests and testing programs frequently employed by psychoeducational specialists. F-S

489-753A LAB: GUIDANCE AND COUNSELING SERVICES. 1 Cr. Introduction to basic psychometric materials and techniques employed by counselors. Included are individual inventories, aptitude and achievement tests, problem surveys and other screening devices. F-S

489-753B LAB: SCHOOL PSYCHOLOGY. 1 Cr. Introduction to basic psychometric materials and techniques employed by school psychologists. Emphasis is placed upon individual mental tests and procedures. F-S

489-758 PSYCHOEDUCATIONAL DISABILITY. 6 Cr. Develops comprehensive understanding of psychoeducational disabilities. Emphasis is placed upon etiology, characteristics and programmatic or curricular methods in relation to mental retardation, emotional disturbances, behavioral disorders, learning disabilities, physical and sensory impairments, maturational lag, social/cultural deviation and multi-handicapping conditions.

489-763 PSYCHOEDUCATIONAL ASSESSMENT. 6 Cr. Competency in selection, administration, scoring and interpretation of psychoeducational assessment techniques and the integration of results into comprehensive picture of an individual's psychoeducational abilities and disabilities. Covered are methods of intellectual, neurological, psychosocial, and sensory-motor assessment techniques which are used to identify psychoeducational characteristics and needs. Prerequisites: 489-753, 489-758.

489-766 EDUCATIONAL APPLICATIONS OF NEUROPSYCHOLOGY. 2 Cr. The application of neuropsychological theory and assessment techniques to the education of children who possess cortical damage or dysfunction. Prerequisite: 489-753, 489-753B.

489-770 THESIS. 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method

of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major advisor. F-W-S

489-773 PSYCHOEDUCATIONAL INTERVENTION. 6 Cr. Competency in design, implementation, evaluation and provision of direct and indirect intervention services. Covers individual and group theraputic, programmatic and curricular methods. Areas of skill development include, behavior modification; classroom management; developmental, remedial and compensatory programming; curriculum development; play therapy; parent counseling and education. Prerequisites: 489-758, 479-760, 413-790, and 413-762. Enrollment limited to school psychology trainees and others with consent of instructor.

489-781 FIELD PRACTICUM IN PSYCHOEDUCATIONAL SERVICES I. 3 Cr. Provides the prospective school psychologist with the initial "on site" experience of functioning as a school psychologist. Special educational evaluations, programming and introduction to complex cases and staffings. Prerequisites: 413-743, 413-748. F-W

489-782 FIELD PRACTICUM IN PSYCHOEDUCATIONAL SERVICES II. 3 Cr. Provides continuing "on-site" experience of functioning as a school psychologist. Increased applications of expanded assessment skills, more complex diagnostic problems, intervention techniques and leadership roles within the placement setting. Prerequisite: 489-781. F-W

489-784 CLINICAL PRACTICUM IN PSYCHOEDUCATIONAL SERVICES I. 3 Cr. This practicum course is designed to provide more intensive and extensive clinical experiences. Work with pre-school children, post school young adults, school age children and their parents. Special assessment and intervention techniques are emphasized. Prerequisites: 413-743, 413-748. F-W-S

489-785 CLINICAL PRACTICUM IN PSYCHOEDUCATIONAL SERVICES II. 3 Cr. Provides integrative learning experiences into the role and style of function appropriate to the individual and the profession. Long—term therapeutic contacts are required. Experience in one or more areas of specialization is available. Prerequisite: 489-784. F-W-S

489-792 INTERNSHIP IN SCHOOL PSYCHOLOGY. 8 Cr. The student will devote a minimum of 360 clock hours (one quarter) in supervised internship experiences. The student will be working with a certified school psychologist in local area schools and/or other approved personnel in other approved situations; e.g., a counseling psychologist in the APA approved University Counseling Center. May be repeated. Prerequisite: Completion of the School Psychologist I Curriculum.

ACADEMIC AFFAIRS

500-500 INTRODUCTION TO FUTURES STUDY. 2 Cr. Introduction to various methods of future prediction, thereby orienting the student's training

toward future alternatives. In addition, various major areas of human activity will be examined in order to study the major future problems they will face and the impact these problems will have during the student's lifetime. W-S

500-510 INTRODUCTION TO WOMEN'S STUDIES. 2 Cr. An examination of the experience of women in American society, their past and present contributions and roles, and perspectives on the future. F-W-S

500-525 ADVANCED FUTURES STUDY. 1 Cr. The application to the student's program area of the strategies of futures study culminating in a student-designed futures study. Prerequisite: 500-500.

500-700 PROGRAM SEMINAR IN INDUSTRIAL EDUCATION. 0 Cr. Development of competencies in self-analysis, planning, and managing, resulting in a series of actions, the outcome of which is an acceptable degree program. Required of entering program students. Prerequisite: Admission to the M.S. Degree program in Industrial Education. F-W-S

500-735 INVESTIGATIONS - (Graduate Degree which student is seeking) 2 Cr. A research experience which culminates in a Plan B paper. Prerequisites: (1) 421-740, (2) Admission to degree candidacy.

MEDIA TECHNOLOGY

600-504 ELEMENTARY PHOTOGRAPHY. 2 Cr. Fundamentals of photography including aesthetics, basic theory, camera operation, film selection, lighting, roll film processing, contact printing, enlarging and print finishing. Student must provide his own camera. F-W-S

600-535 FILM: HISTORY AND APPRECIATION. 3 Cr. Traces the evolution of the motion picture film as a medium of mass communication and aesthetic expression; contributions of noted film producers are identified. F

600-560 AUDIO-VISUAL COMMUNICATIONS. 2 Cr. Methods of evaluating and using audio-visual materials effectively in teaching. Experience in operating equipment; basic techniques of media preparation. F-W-S

600-561 PREPARATION OF AUDIO-VISUAL MATERIALS. 2 Cr. Planning, designing and producing bulletin, felt, hook-and-loop, and slide/tape presentations; charts, graphs, posters, models, work-ups, transparencies; mounting, laminating and display techniques. Prerequisite: 600-560. F-W-S

600-573 EDUCATIONAL TELEVISION UTILIZATION. 1 Cr. Effective utilization and evaluation of telelessons in teaching; operation of TV receiving and distribution equipment; and curriculum considerations for integration of ETV programming into classroom instruction. S

600-605 ADVANCED PHOTOGRAPHY. 2 Cr. Advanced monochromatic photography including aesthetics, advanced theory, view camera techniques, studio lighting, selection of photographic materials and equipment, sheet film processing, specialized processes and techniques. Prerequisite: 600-504. F-S

600-615 MICROGRAPHICS FUNDAMENTALS. 1 Cr. Fundamentals of microform production and utilization. Descriptions of microformats, production of microformats, COM, colormicrofiche, storage and retrieval concepts, micropublishing, acquisitions, management and legal aspects of microforms. F-S

600-625 BROADCAST TV PRODUCTION INTERNSHIP. 1-4 Cr. Practical experience in all phases of broadcast color television program production. The student will develop his internship program with the manager of the Teleproduction Center. One credit will be given for each 40 clock hours of work experience. Prerequisites: 600-593, 391-554, or approval of instructor. F-W

600-630 AUDIO/FILM/TV PRODUCTION FUNDAMENTALS. 3 Cr. Instructional film, audiotape, and videotape production fundamentals. Designed for Media Technology major generalists. Should *not* be taken by those planning to take 391-554. F-S

600-632 TV PRODUCTION. 2 Cr. Advanced instruction in small format and broadcast television program production, content development and utilization: Program development, equipment utilization and practicum instruction in producing, directing, script preparation, production engineering, audio control, video switching, camera operation, floor coordination and lighting. Prerequisite: 600-630.

600-636 MOTION PICTURE PRODUCTION. 2 Cr. Advanced concepts of motion picture production applied to individual student films. Production planning, shooting, animation, editing, sound recording, titling and other technical problems of production. Prerequisite: 600-630. W-S

600-645 COLOR PHOTOGRAPHY. 2 Cr. Aesthetics, color theory, film selection, lighting, copy techniques, slide duplication, reversal and negative color film processing, and color printing. Prerequisite: 600-504. F-W-S

600-650 MULTI-IMAGE DEVELOPMENT. 1-2 Cr. Practical experience in planning, programming and presenting multi-image audio-visual productions. Demonstrations of production techniques and various synchronizing systems. Students enrolling for two credits will each design and produce a sophisticated multi-image presentation on an independent non-scheduled basis. S

600-710 MEDIA REFERENCE FUNDAMENTALS. 2 Cr. Survey of bibliographic tools necessary for locating learning resources; information sources used in media center reference service; and practice in consulting with users. W

600-715 MEDIA SELECTION. 2 Cr. Media selection and acquisition fundamentals for school and college media centers. Principles, standards, tools and procedures for building a collection of print and audio-visual materials. F-S

600-717 MEDIA EQUIPMENT. 2 Cr. Principles and procedures for the selection, purchase and maintenance of media technology equipment for education and training. Prerequisite: 600-560. W-S

600-720 MEDIA CATALOGING AND ORGANIZATION. 2 Cr. Principles and techniques for the cataloging, organization, circulation, conservation and management of print and audio-visual materials in school and college media centers. F

600-722 PROBLEMS IN AUDIO-VISUAL COMMUNICATIONS. 2 Cr. Identification, selection, and completion of a problem in audio-visual communications, culminating in a Plan B paper. Prerequisite: 600-722. F-W-S

600-730 MEDIA RETRIEVAL SYSTEMS. 2 Cr. Information storage and retrieval models applied to media centers and their operation. Compares traditional models with the logic of manual, mechanical, and electronic retrieval. W

600-732 PLANNING MEDIA FACILITIES. 2 Cr. Planning physical facilities for media production and distribution centers; large group multi-media auditoria; small group instructional area; and mediated carrels. Consideration of technological and environmental factors. Emphasis on working relationships with architects. Prerequisite: 600-560. W

600-740 INSTRUCTIONAL DEVELOPMENT. 2 Cr. Systems approach to instructional improvement. Identification and analysis of instructional needs; design of instructional alternatives; selection and development of instructional packages; and the evaluation and validation of the resulting products in terms of student learning. Prerequisites: 600-560, 600-561. W-S

600-750 PROBLEMS IN INDUSTRY AND TECHNOLOGY - PHOTOGRAPHY. 2-6 Cr. Substantive study and activity for specialists in the photography field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in photography. Preparation of a technical report may be repeated for a maximum of six semester credits. Prerequisite: 190-739 and consent of department chairman.

600-760 EDUCATIONAL MEDIA ADMINISTRATION. 2 Cr. Administration and supervision of school and college educational media programs. Group field projects supplement discussions of related literature. Prerequisite: 600-560. W-S

600-770 THESIS—AUDIO-VISUAL COMMUNICATIONS. 2-6 Cr. Independent research under direction of investigation advisor. Selection of problem, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for two, four, or six semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major advisor. F-W-S

600-788 MEDIA TECHNOLOGY INTERNSHIP. 1-3 Cr. Practical experience in the various operational aspects of a school, university, or special media center. The student will develop his internship program in conjuction with his major advisor and the media center director. Prerequisite: Consent of academic advisor. F-W-S

600-799 INDEPENDENT STUDY. F-W-S

The University of Wisconsin-Stout is an Equal Opportunity, Affirmative Action employer and does not discriminate on the basis of sex in the educational programs or activities it operates, including employment and admission. This statement is published in accordance with Section 86.9 of Title 45 of the Code of Federal Regulations, implementing Title IX of the Education Amendment of 1972. Inquiries concerning Affirmative Action, Title IX and Equal Employment Opportunity may be directed to the Assistant to the Chancellor, University of Wisconsin-Stout, Menomonie, WI 54751, telephone: (715) 232-2295.

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